

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.2 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Virginia Water Quality Standards of 9VAC25-260 *et seq.* and the Code of Maryland Regulations (COMAR) 26.08.02.

1. Facility Name and Mailing Address: Fairview Beach WWTP  
9207 Kings Highway  
King George, VA 22485  
SIC Code : 4952 WWTP  
Facility Location: 7152 Potomac Landing Drive  
King George, VA 22485  
County: King George  
Facility Contact Name: Jeff Hockaday  
Telephone Number: 540-775-2746  
Facility E-mail Address: [jhockaday@co.kinggeorge.state.va.us](mailto:jhockaday@co.kinggeorge.state.va.us)
2. Permit No.: VA0092134  
Expiration Date of previous permit: October 10, 2012  
Other VPDES Permits associated with this facility: VAN010060  
Other Permits associated with this facility: N/A  
E2/E3/E4 Status: N/A
3. Owner Name: King George County Service Authority  
Owner Contact/Title: Christopher F. Thomas  
General Manager  
Telephone Number: 540-775-2746  
Owner E-mail Address: [cthomas@co.kinggeorge.state.va.us](mailto:cthomas@co.kinggeorge.state.va.us)
4. Application Complete Date: April 20, 2012  
Permit Drafted By: Joan C. Crowther  
Date Drafted: October 22, 2012  
Draft Permit Reviewed By: Alison Thompson  
Date Reviewed: October 29, 2012  
WPM Review By: Bryant Thomas  
Date Reviewed:  
Public Comment Period : Start Date: End Date:
5. Receiving Waters Information: The facility's outfall is into the main stem of the Potomac River as such, the flow frequency determination cannot be calculated. The Potomac River is tidal and located in the transition zone at the point of discharge. These waters are the under the jurisdiction of the State of Maryland.  
Receiving Stream Name : Potomac River  
Stream Code: 1aPOT  
Drainage Area at Outfall: N/A  
River Mile: 67.6  
Stream Basin: Potomac River  
Subbasin: Potomac River  
Basin Name<sup>1</sup>: POTOH (Lower Potomac River Oligohaline)  
Basin Code<sup>1</sup>: 02140101  
Special Standards<sup>1</sup>: MDE-Use II  
VA WQS Class<sup>2</sup>: II  
7Q10 Low Flow: Tidal  
7Q10 High Flow: Tidal  
1Q10 Low Flow: Tidal  
1Q10 High Flow: Tidal  
30Q10 Low Flow: Tidal  
30Q10 High Flow: Tidal  
Harmonic Mean Flow: Tidal  
30Q5 Flow: Tidal

Footnote <sup>1</sup> - State of Maryland WQS

Footnote <sup>2</sup> - VA WQS Class of Water (9VAC25-260-140C) Class II Transition Zone: Transition zone includes all tidal tributaries that enter the Potomac River from N38°31'27.05"/W77°17'7.06" (midway between Shipping Point and Quantico Pier) to N38°23'22.78"/77°1'45.50" (one mile southeast of Mathias Point). The VA Water Quality Standards states that the numerical water criteria listed in subsection B of this section shall be applied according to the classes of water and boundary designations. For Transition Zone, the more stringent of either the freshwater or saltwater criteria apply.

## 6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- ☒ State Water Control Law  
☒ Clean Water Act  
☒ VPDES Permit Regulation  
☒ EPA NPDES Regulation

- ☒ EPA Guidelines  
☒ Water Quality Standards  
☒ Other – State of Maryland WQS and  
 General Virginia Pollutant Discharge Elimination System  
 (VPDES) Watershed Permit Regulation For Total Nitrogen And  
 Total Phosphorus Discharges And Nutrient Trading In The  
 Chesapeake Bay Watershed In Virginia (VAN010060)

## 7. Licensed Operator Requirements: Class II

## 8. Reliability Class: Class I

## 9. Permit Characterization:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Private         | <input checked="" type="checkbox"/> Effluent Limited        | <input checked="" type="checkbox"/> Possible Interstate Effect   |
| <input type="checkbox"/> Federal         | <input checked="" type="checkbox"/> Water Quality Limited   | <input checked="" type="checkbox"/> Compliance Schedule Required |
| <input type="checkbox"/> State           | <input type="checkbox"/> Toxics Monitoring Program Required | <input type="checkbox"/> Interim Limits in Permit                |
| <input checked="" type="checkbox"/> POTW | <input type="checkbox"/> Pretreatment Program Required      | <input type="checkbox"/> Interim Limits in Other Document        |
| <input checked="" type="checkbox"/> TMDL |   |  |

## 10. Wastewater Sources and Treatment Description:

The Fairview Beach wastewater treatment plant is a Sequencing Batch Reactor (SBR) plant which treats domestic wastewater from Fairview Beach service area. The wastewater treatment plant consists of grinder and auger headworks, one (1), 150,179 gallon pre-equalization tank, two (2) SBR basins, 154,000 gallons each, one (1) 114,407 gallon post-equalization basin, effluent flow meter, UV disinfection rated for 500,000 gallons (2.5 peak factor), and eight (8) inch outfall pipe to the Potomac River. The following chemicals are added to the treatment process:

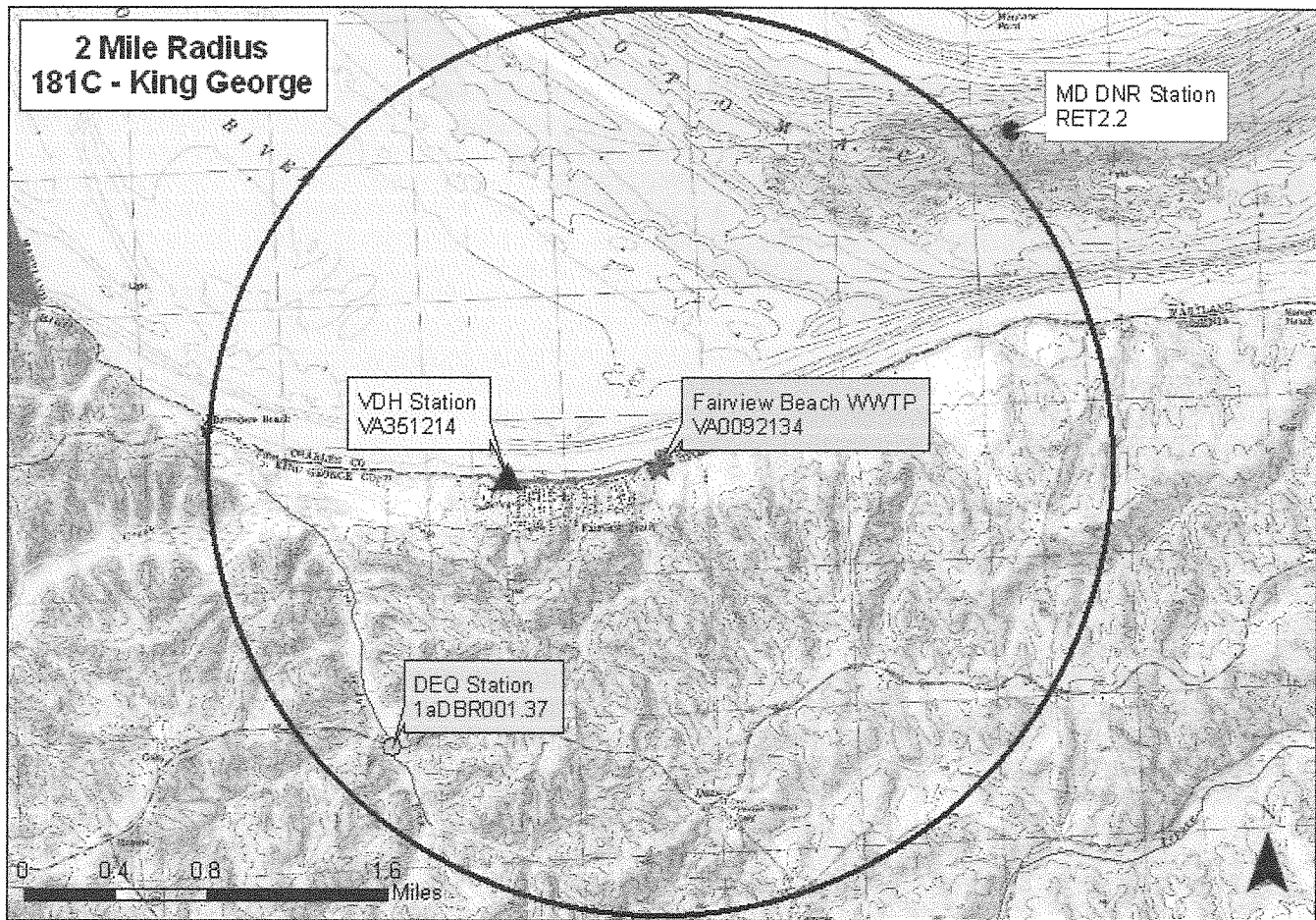
- 1) **Alum:** Alum ash is added for chemical phosphorus removal in liquid form at a rate of about 50 lb/d.
- 2) **Soda Ash:** Soda ash is added for pH and alkalinity adjustments at a rate of about 25 lb/d in the incoming raw wastewater.

See Attachment 1 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall Latitude and Longitude
001	Domestic and/or Commercial Wastewater	See Item 10 above.	0.2 MGD	38° 19' 54" N 77° 14' 4" W

USGS Topographic Map: King George, DEQ #181C

**11. Sludge Treatment and Disposal Methods:**

Sludge from the SBR basins is decanted to an aerobic digester for reduction of solids. Solids are removed from the aerobic digester and transported to the Dahlgren Wastewater Treatment Plant for further digestion and dewatering using a belt filter press. Ultimately, solids are disposed at the King George County Landfill.

**12. Monitoring Stations in Vicinity of Discharge - (VA DEQ has no Ambient Water Quality Stations in the 2-mile radius of the Fairview Beach outfall.)**

TABLE 2	
Station RET2.1	Maryland DNR Station Potomac River approximately 5.8 miles upstream of Fairview Beach
Station RET2.2	Maryland DNR Station Potomac River approximately 1.6 miles downstream of Fairview Beach

**13. Material Storage:**

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Alum	40 – 50 lbs bags	Stored in the Chemical Building
Soda Ash	40 – 50 lbs bags	Stored in the Chemical Building

**14. Site Inspection:**

Performed by Terry Nelson on June 3, 2009 (see Attachment 2).

**15. Receiving Stream Water Quality and Water Quality Standards:**a) Ambient Water Quality Data

This facility discharges to the oligohaline portion of the Potomac River, which falls under Maryland's jurisdiction. Maryland Department of Natural Resources (MD DNR) has a surface water quality monitoring station, RET2.2, located approximately 1.6 miles downstream of the outfall for Fairview Beach WWTP. Additionally, MD DNR's water quality monitoring station RET2.1 is located approximately 5.8 miles upstream of Outfall 001.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

<i>Impairment Information in the VA Draft 2012 Integrated Report*</i>						
Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Potomac River/Fairview Beach	Recreation	Enterococcus	No	---	---	2018
	Fish Consumption	PCBs	Tidal Potomac PCB 10/31/2007	None	---	N/A
<i>Impairment Information in the Final Draft Maryland 2012 Integrated Report (final report not yet approved by EPA)</i>						
Potomac River	Seasonal Shallow-water SAV substrate	TSS	Chesapeake Bay 12/31/2010	18273.36 (lbs/year) TSS	0.20 MGD	N/A
	Open-Water Fish & Shellfish	Nitrogen (Total)		1827 (lbs/year) TN		
	Seasonal Migratory Fish Spawning and Nursery	Phosphorus (Total)		183 (lbs/year) TP		
	Aquatic Life & Wildlife	Unknown	No	---	---	Low priority, not within 2 years

\*The Virginia Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.



Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

The planning statement dated October 2, 2012 is found in Attachment 3.

c) Receiving Stream Water Quality Criteria

The receiving stream is the main stem of the Potomac River which is a tidal tributary of the Chesapeake Bay. The Potomac River is under the jurisdiction of the State of Maryland.

The Maryland Water Quality Standards, COMAR 26.08.02.00 designates this section of the Potomac River as Use II waters. These are tidally influenced waters of the Chesapeake Bay and its tributaries that have the actual or potential for harvesting oysters, soft-shell clams, hard-shell clams and brackish water clams. The standards require the discharge to maintain pH of 6.5 to 8.5 SU, a dissolved oxygen concentration of 5.0 mg/L minimum anytime and a fecal coliform bacteria limit of 14 colonies per 100 mls. The standard also establishes a seasonal Migratory Fish Spawning and Nursery Subcategory that requires a minimum dissolved oxygen level of 6.0 mg/L during the period of February 1 through May 31.

Attachment 4 details other water quality criteria applicable to the receiving stream. Because the facility's discharge receiving stream has been designated as Virginia Water Quality Standards Class II (Transition Zone) waters, water quality criteria for both tidal freshwater and transition zone were calculated. The first two attachments entitled Freshwater Water Quality Criteria/Wasteload Allocation Analysis are the results for the tidal freshwater (one is calculating the acute WLAs (2:1 dilution) and the other is calculating the chronic WLAs (50:1 dilution)). The third attachment entitled Saltwater and Transition Zones Water Quality Criteria/Wasteload Allocation Analysis is calculating the transition zone WLAs. Per VA Water Quality Standards, the more stringent of either the freshwater or transition zone criteria apply.

Ammonia:

Staff has re-evaluated the receiving stream ambient monitoring data and the effluent data for pH and temperature and finds significant differences from the data used to establish ammonia criteria from the previous reissuance. The fresh water, aquatic life Water Quality Criteria for Ammonia is dependent on the instream temperature and pH. The 90<sup>th</sup> percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream.

The Maryland Department of Natural Resources collects water quality data approximately 1.6 miles downstream of Fairview Beach Wastewater Treatment Plant. This monitoring station is designated as Station RET2.2. The 90<sup>th</sup> percentile for temperature and pH was calculated using the data collected from January 2009 through February 2012. The 90<sup>th</sup> percentile for pH was 7.9 SU and temperature was 28.2°C. The 2007 permit reissuance used a mean pH value of 7.7 SU and a mean temperature value of 15.4°C to calculate the ammonia criteria value.

The Fairview Beach WWTP's effluent data for pH and temperature was reviewed for the period of June 2009 through June 2012. The resulting 90<sup>th</sup> percentile values were for pH 8.1 SU and for temperature 26°C.

Both stream and effluent data sets can be found in Attachment 5.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). No hardness data for the receiving stream was found. Staff guidance suggests using a default hardness value of 50 mg/L CaCO<sub>3</sub> for streams east of the Blue Ridge. The facility's average total hardness value for the period of September 2010 through August 2012 is 60 mg/L CaCO<sub>3</sub>. See Attachment 6 for facility's hardness data. The hardness-dependent metals criteria shown in Attachment 5 are based on this average value.

Bacteria Criteria:

- 1) The Virginia Water Quality Standards (9VAC25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

Enterococci bacteria per 100 ml of water shall not exceed a monthly geometric mean of 35 n/100 mls for a minimum of four weekly samples taken during any calendar month.

- 2) The Maryland Water Quality Standards – COMAR 26.08.03-3C(1) requires monitoring and effluent limits for fecal coliform bacteria in Use II shellfish waters not to exceed 14 MPN per 100 milliliters. Fecal coliform is proposed to be collected once per week.

d) Receiving Stream Special Standards

The State of Maryland has designated the receiving stream, the main stem of the Potomac River, Basin name as POTOH (Lower Potomace River Oligohaline), Basin Code as 02140101 and Special Standards as MDE- Use II (Shellfish harvesting) are defined as waters protected as actual or potential areas for the harvesting of oysters, softshell clams, hardshell clams and brackish water clams.

e) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on September 28, 2012 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The bald Eagle which is Federal Species of Concern and State Threatened was identified within a 2 mile radius of the discharge. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge. The Virginia DGIF Fish and Wildlife database search results are in Attachment 7.

The stream that the facility discharges to is within a reach identified as having an Anadromous Fish Use. It is staff's best professional judgment that the proposed limits are protective of this use.

**16. Antidegradation (9VAC25-260-30):**

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the stream being listed as being impaired on the 303(d) report, nutrient enrichment and the effluent limitations being established at secondary treatment. Permit limits

proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

#### 17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from permit application and DMR has been reviewed and determined to be suitable for evaluation. Effluent data were reviewed from November 2007 to September 2012, and the following effluent exceedances were noted:

**Total Phosphorus** (calendar year concentration): December 2007

**Fecal Coliform:** January 2008, June 2011, August–October 2011.

The following pollutants require a wasteload allocation analysis: Ammonia as N.

b) Determining Wasteload Allocations (WLAs):

**For Tidal Freshwater:**

Acute Toxicity – DEQ Guidance Memorandum 00-2011 states that for surface discharges into tidal estuaries or estuarine embayments, the acute wasteload allocation (WLAa) should be set at two times the acute standard because initial mixing in these circumstances is limited and lethality in the allocated impact zone must be prevented. The 2X factor is derived from the fact that the acute standard or criteria maximum concentration (CMC) is defined as one half the final acute value (FAV) for a specific toxic pollutant. The FAV prevents acute toxicity 95% of the time for genera tested. If the acute value is one half the FAV, then two times the acute standard should equal the FAV or equal an acceptable value for preventing lethality. The Acute WLAs in Attachment 4 were calculated using this 2:1 factor.

Chronic Toxicity – DEQ Guidance Memorandum 00-2-11 states that for surface discharges into tidal estuaries, estuarine embayments, or open ocean, the chronic wasteload allocation (WLAc) should be based on site specific data for waste dispersion or dilution when available and appropriate. Where wastewater dispersion or dilution data are not available, a dilution ratio of 50:1 may be used. Because the discharge is small in relation to the receiving stream flows, staff will use the recommendation of the guidance memo. The Chronic WLAs in Attachment 4 were calculated using the 50:1 factor.

**For Tidal Transition Zone:**

For determining the Saltwater and Transition Zones Water Quality Criteria/Wasteload Allocations, the mean salinity was determined. This data was collected from the MD DNR water quality monitoring station, RET2.2, located approximately 1.6 miles downstream of the Fairview Beach WWTP outfall at a depth of 4.6 meters. The mean salinity for the January 2009 through February 2012 period was 3.5 g/kg. See Attachment 8. The Tidal Transition Zone WLAs are found in Attachment 4.

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage; therefore, ammonia as N requires a wasteload allocation determination.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff re-evaluated the receiving stream and the effluent pH and temperature values and has concluded it is significantly different than what was used previously to derive ammonia criteria. Also, during the 2007 permit issuance, the wastewater treatment plant was being operated in a batch discharge mode (discharges would occur only 4 to 5 times daily) and at that time was determined as a periodic discharge. As such, only the acute water quality standards would be applicable. Since then, the wastewater treatment plant has continuous discharge; therefore, both acute and chronic water quality standards are applicable.

DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage. Ammonia statistical analyses were performed for both freshwater tidal and transition zone. The freshwater tidal calculations resulted in ammonia effluent limitations of 9.4 mg/L monthly average and 12.6 mg/L weekly maximum based on acute toxicity. The transition zone calculations resulted in ammonia effluent limitations of 3.5 mg/L monthly average and 4.7 mg/L weekly maximum based on acute toxicity. In accordance with the Virginia Water Quality Standards, the more stringent of either the freshwater or transition zone criteria apply. See Attachment 9 for Ammonia calculations.

2) Metals/Organics:

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD<sub>5</sub>), total suspended solids (TSS), Fecal Coliform, Enterococci Bacteria, and pH limitations are proposed.

BOD<sub>5</sub> and TSS effluent limitations were set at secondary treatment (30 mg/L) based on the significant dilution of the receiving stream.

Dissolved Oxygen effluent limitation of 6.0 mg/L (year round) is based on the Maryland Water Quality Standards for Use II, seasonal and migratory fish spawning and nursery subcategory. The year round requirement is based on Staff's Best Professional Judgment.

pH limitations are set at the Maryland water quality criteria.

Enterococci limitations are in accordance with the Virginia Water Quality Standards 9VAC25-260-170.

Fecal coliform effluent limitations are in accordance with Maryland's Use II requirements found in COMAR26.08.03-3C(1).

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of  $\geq 0.04$  MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN010060. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of  $\geq 0.5$  MGD above the fall line and  $\geq 0.1$  MGD below the fall line.

Monitoring for Nitrates + Nitrites, and Total Kjeldahl Nitrogen are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820. Annual average concentration effluent limitations for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual averages are based on the technology installed as part of the WQIF grant funding (Grant Number 440-S-08-03).

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, BOD<sub>5</sub>, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, fecal coliform, Enterococci, Total Nitrogen (calendar year concentration), and Total Phosphorus (calendar year concentration).

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual and 9VAC25-820, *General VPDES Watershed Regulations for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia*.

18. **Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

## VPDES PERMIT PROGRAM FACT SHEET

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**19.A Effluent Limitations/Monitoring Requirements for Outfall 001:**

Design flow is 0.2 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	4	NA	NA	6.5 S.U.	8.5 S.U.	1/D	Grab
BOD <sub>5</sub>	1	30 mg/L 23 kg/day	45 mg/L 34 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	1	30 mg/L 23 kg/day	45 mg/L 34 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen (DO)	4	NA	NA	6.0 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	3	3.5 mg/L	4.7 mg/L	NA	NA	3D/W	8H-C
Enterococci (Geometric Mean)	3	35 n/100mls	NA	NA	NA	3D/W	Grab
Fecal Coliform (Monthly mean)	4	14 n/100 mls	NA	NA	NA	1/W	Grab
Nitrate+Nitrite, as N	3, 5	NL mg/L	NA	NA	NA	2/M	8H-C
Total Kjeldahl Nitrogen, TKN	3, 5	NL mg/L	NA	NA	NA	2/M	8H-C
Total Nitrogen <sup>a</sup> .	3, 5	NL mg/L	NA	NA	NA	2/M	Calculated
Total Nitrogen – Year to Date <sup>b</sup> .	3, 5	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year <sup>b</sup> .	3, 5	6.5 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	2/M	8H-C
Total Phosphorus – Year to Date <sup>b</sup> .	3, 5	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year <sup>b</sup> .	3, 5	1.0 mg/L	NA	NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Virginia Water Quality Standards
4. Maryland Water Quality Standards
5. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

3D/W = Three days a week.

1/YR = Once every year.

2/M = Twice a month, at least 7 days apart.

**8H-C** = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by  $\geq 10\%$  or more during the monitored discharge.

**Grab** = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for more information on the Nutrient Calculations.

**19.B Influent Monitoring Requirements for Internal Outfall 101:**

Design flow is 0.2 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type		
BOD <sub>5</sub>	1	NL	NL	NL	NL	NA	NA	1/YR	8H-C
Total Suspended Solids (TSS)	1	NL	NL	NL	NL	NA	NA	1/YR	8H-C

The basis for the limitations codes are:

MGD = Million gallons per day.

1/YR = Once every year.

1. Best Professional Judgment

NA = Not applicable.

NL = No limit; monitor and report.

**20. Other Permit Requirements:**

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.  
9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

Part I.C. of the permit details the requirements for a Schedule of Compliance for Ammonia as N.

The VPDES Permit Regulation, 9VAC25-31-250 allows use of Compliance Schedules to allow facilities sufficient time for upgrades to meet newly established effluent limits. The permit contains newly established limits for Ammonia as N. Since the facility was not designed to meet these limits, a schedule of compliance is required to provide the permittee time for facility upgrade. The permittee shall achieve compliance with the final limits specified in Part I.A. of the VPDES permit in accordance with the following schedule as contained in Part I.C. of the permit:

Action	Time Frame
a. Submit plan and schedule for the upgrade of the facility .	Within 60 days after the effective date of the permit.
b. Achieve compliance with final limits	Within one year of the permit's effective date.



**21. Other Special Conditions:**

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.
- e) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I.
- f) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- g) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- h) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- i) Hours of Staffing. The facility shall be staffed at a minimum of 8 hours per day.
- j) TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.
- k) Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.
- l) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3)

facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

- m) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- n) PCB Monitoring. This special condition requires the permittee to conduct PCB dry weather and wet weather monitoring using ultra-low level PCB analysis to support the development of the PCB TMDL for the fish consumption use impairment in Potomac River.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

## **22. Changes to the Permit from the Previously Issued Permit:**

- a) Special Conditions:
  - 1) PCB monitoring special condition was added to the draft permit due to the PCB impairment in the Potomac River (the facility's receiving stream).
- b) Monitoring and Effluent Limitations:
  - 1) The *E.coli* Bacteria effluent limitation and monitoring was removed and replaced with the Enterococci Bacteria effluent limitation and monitoring because the discharge receiving stream has been designated as Class II (Transition Zone) in the VA Water Quality Standards.
  - 2) Ammonia as N effluent limitations and monitoring requirements have been added to the draft permit.
  - 3) Yearly Influent monitoring for BOD<sub>5</sub> and TSS has been added to the permit.

## **23. Variances/Alternate Limits or Conditions:**

There are no variances/alternate limits or conditions affecting this draft permit.

## **24. Public Notice Information:**

First Public Notice Date:

Second Public Notice Date:

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 10 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit;

and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

**25. Additional Comments:**

Previous Board Action(s): On December 9, 2011, the facility was referred to Enforcement because of noncompliance with Fecal Coliform for the months of June 2011, August 2011, September 2011 and October 2011. The facility was dereferred on July 30, 2012 due to the facility correcting the noncompliance with the fecal coliform.

Staff Comments: None.

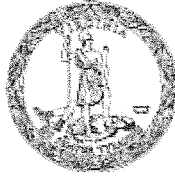
Public Comment: *State "No comments were received during the public notice." or "Comments received during the public notice are provided in the attached Response to Comments." Include significant VDH, DGIF, DCR and EPA comments in the Response to Comments.*

EPA Checklist: The checklist can be found in Attachment 11.

VA0092134 Fairview Beach Wastewater Treatment Plant  
Fact Sheet Attachments

Attachment	Description
1	Facility Schematic/Diagram
2	Site Inspection by DEQ Compliance Staff on June 3, 2009
3	DEQ Planning Statement dated October 2, 2012
4	Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated October 5, 2012 (Acute and Chronic) Saltwater and Transition Zones Water Quality Criteria/Wasteload Allocation Analysis dated October 5, 2012
5	Fairview Beach WWTP pH and Temperature Data June 2009 – June 2012 Potomac River pH and Temperature Data January 2009 – February 2012
6	Fairview Beach WWTP Hardness Data September 2010 – August 2012
7	DGIF Threatened and Endangered Species Database Search dated September 28, 2012
8	Potomac River Salinity Data January 2009 – February 2012
9	2012 Ammonia Analysis
10	Public Notice
11	EPA Checklist dated October 23, 2012





# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Preston Bryant  
Secretary of Natural  
Resources

David K. Paylor  
Director

Thomas Faha  
Regional Director

June 30, 2009

Mr. Christopher Thomas  
General Manager  
King George County  
10459 Courthouse Drive, Suite 201  
King George, VA 22485

**Re: Fairview Beach WWTP, Permit VA0092134**

Dear Mr. Thomas:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at the Fairview Beach – Wastewater Treatment Plant (WWTP) on June 3, 2009. The compliance staff would like to thank your staff for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had **Deficiencies** for the laboratory inspection. Please note the requirements and recommendations addressed in the technical summary. Please submit in writing a progress report to this office by **July 21, 2009** for the items addressed in the summary. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Virginia Regional Office at (703) 583-3833 or by E-mail at [terry.nelson@deq.virginia.gov](mailto:terry.nelson@deq.virginia.gov).

Sincerely,

Terry Nelson  
Environmental Specialist II

cc: Permits / DMR File, OWCP – (SGStell)  
Electronic Copy: Compliance Manager; Compliance Auditor  
Electronic Copy: Jeff Hockaday, KGCSA

**Summary of conditions from last inspection**

**No previous inspection by VA DEQ staff.**

---

**Summary of conditions for current inspection**

**Comments:**

- The facility appearance showed good housekeeping and maintenance practices.
- Facility DMRs show results near 3 mg/L Total Nitrogen and 0.3 mg/L Total Phosphorus, which are well below permit limits.
- SBR valves and pumps appear to be properly operating based on the water clarity in the EQ tank.
- Water clarity in the EQ tank was not impacted by the significant alga shown in Photograph 5.
- Two UV modules and a UV sensor were not functioning. KGCSA staff said the broken UV sensor had been sent back to the manufacturer several months ago.

**Recommendations for action:**

1. **The backflow prevention device was overdue for inspection.**
2. **The influent channel for the manual bar screen had leaves in it. Proper cleaning of the channel is required per Part II Section Q of the permit.**
3. **Prompt replacement or repair of the broken UV modules and sensors is required per Part II Section Q of the permit.**
4. **DEQ staff recommends KGCSA evaluate alternative methods for limiting the growth of alga in the post EQ tank and/or tank cleaning.**
5. **KGCSA staff shall review the O&M manual for necessary updates. KGCSA has the option of submitting a new manual or submitting a list of corrections and updates.**
6. **DEQ is requesting KGCSA provide the distance of the final outfall from the Virginia river bank and if the outfall includes a diffuser.**



### LABORATORY INSPECTION REPORT SUMMARY

<b>FACILITY NAME:</b> <b>Fairview Beach WWTP</b>	<b>FACILITY NO:</b> <b>VA0092134</b>	<b>INSPECTION DATE:</b> <b>June 3, 2009</b>
<input checked="" type="checkbox"/> <b>Deficiencies</b>	<input type="checkbox"/> <b>No Deficiencies</b>	
<b>LABORATORY RECORDS</b>		
<p>The Laboratory Records section had <b>No Deficiencies</b> noted during the inspection.</p>		
<b>GENERAL SAMPLING AND ANALYSIS</b>		
<p>The General Sampling and Analysis section had <b>Deficiencies</b> noted during the inspection.</p> <p><i>Deficiencies:</i>          See individual parameter listings for sample preservation problems.</p>		
<b>LABORATORY EQUIPMENT</b>		
<p>The Laboratory Equipment section had <b>Deficiencies</b> noted during the inspection.</p> <p><i>Deficiencies:</i></p> <ol style="list-style-type: none"> <li>1. No records were provided to show the weights used for verifying the balance each day had been compared to NIST certified weights within the past 12 months.</li> <li>2. The solids drying oven was below the required range during the inspection. The built-in thermometer for the solids drying oven does not appear to be accurate based on DEQ and KGCSA digital thermometer probes placed in sand.</li> <li>3. No thermometer was in use during the inspection to show the sample holding refrigerator is between 0-6° C.</li> </ol>		
<b>INDIVIDUAL PARAMETERS</b>		
<b>pH</b>		
<p>The analysis for the parameter of pH had <b>No Deficiencies</b> noted during the inspection.</p>		
<b>DO</b>		
<p>The analysis for the parameter of Dissolved Oxygen (DO) had <b>No Deficiencies</b> noted during the inspection.</p>		
<b>TSS</b>		
<p>The analysis for the parameter of Total Suspended Solids (TSS) had <b>Deficiencies</b> noted during the inspection.</p> <p><i>Deficiencies:</i></p> <ol style="list-style-type: none"> <li>1. According to Standard Methods 18<sup>th</sup> edition, the filter is to be dried for 60 minutes, cooled, and weighed. The cycle of drying for 60 minutes, cooling, and weighing should be repeated until a constant weight is obtained. The sufficiency of drying records indicated the second drying time was only 30 minutes.</li> <li>2. The staff currently tracks how many samples are received from each treatment plant. A duplicate is run for a treatment plant when the total for that plant reaches 20 samples. For May 2009, the 25<sup>th</sup> sample analyzed that month was the only duplicate noted in the records provided. The proper frequency is every 20<sup>th</sup> sample.</li> </ol>		
<b>Fecal Coliform</b>		
<p>The analysis for the parameter of Fecal Coliform had <b>Deficiencies</b> noted during the review of bench sheets and Chain of Custody (COC) forms.</p> <p><i>Deficiency:</i></p> <ol style="list-style-type: none"> <li>1. Fecal Coliform is analyzed at the Dahlgren WWTP. Of 4 COC forms, none had the temperature of the sample when it was received at Dahlgren WWTP or notation to say the sample was on ice.</li> </ol>		

## LABORATORY INSPECTION REPORT SUMMARY

### **BOD<sub>5</sub>, Nitrogen, Phosphorus, *E. Coli***

The analysis for the parameters of BOD<sub>5</sub>, Nitrogen, Phosphorus, *E. Coli* had **No Deficiencies** noted during the review of Chain of Custody (COC) and Certificate of Analysis (COA) forms.

*Comments:*

- These parameters are analyzed by EnviroCompliance Laboratories in Ashland, VA. One COC for *E. Coli* did not include the temperature of the sample upon receipt. The other 12 COC forms showed receipt temperatures below 6° C. All samples were set up within the specified holding time.

### **COMMENTS**

**The facility staff should check the DEQ website at <http://www.deq.virginia.gov/vpdes/checklist.html> and download the most recent inspection check sheets to keep up to date with changes in minimum laboratory requirements.**

DEQ  
WASTEWATER FACILITY INSPECTION REPORT  
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date																								
<b>VA0092134</b>	<b>October 11, 2007</b>		<b>October 10, 2012</b>																								
Facility Name	Address		Telephone Number																								
<b>Fairview Beach WWTP</b>	<b>7152 Potomac Landing Drive King George, VA 22485</b>																										
Owner Name	Address		Telephone Number																								
<b>King George County Service Authority</b>	<b>10459 Courthouse Drive King George, VA 22485</b>		<b>540-775-2746</b>																								
Responsible Official	Title		Telephone Number																								
<b>Christopher Thomas</b>	<b>General Manager</b>		<b>540-775-2746</b>																								
Responsible Operator	Operator Cert. Class/number		Telephone Number																								
<b>Jeff Hockaday</b>	<b>Class I/1909 001147</b>		<b>540-775-3914</b>																								
TYPE OF FACILITY:																											
<table border="1" style="width: 100%;"> <tr> <td colspan="4" style="text-align: center;"><b>DOMESTIC</b></td> <td colspan="4" style="text-align: center;"><b>INDUSTRIAL</b></td> </tr> <tr> <td>Federal</td> <td></td> <td>Major</td> <td></td> <td>Major</td> <td></td> <td>Primary</td> <td></td> </tr> <tr> <td>Non-federal</td> <td style="text-align: center;"><b>X</b></td> <td>Minor</td> <td style="text-align: center;"><b>X</b></td> <td>Minor</td> <td></td> <td>Secondary</td> <td></td> </tr> </table>				<b>DOMESTIC</b>				<b>INDUSTRIAL</b>				Federal		Major		Major		Primary		Non-federal	<b>X</b>	Minor	<b>X</b>	Minor		Secondary	
<b>DOMESTIC</b>				<b>INDUSTRIAL</b>																							
Federal		Major		Major		Primary																					
Non-federal	<b>X</b>	Minor	<b>X</b>	Minor		Secondary																					
INFLUENT CHARACTERISTICS:																											
		Flow	<b>0.2 MGD</b>																								
		Population Served	<b>800 Winter 1600 Summer</b>																								
		Connections Served	<b>400</b>																								
		BOD <sub>5</sub>	<b>168</b>																								
		TSS	<b>287</b>																								
DESIGN:																											
<b>EFFLUENT LIMITS: Units in mg/L unless otherwise specified.</b>																											
Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.																				
<b>Flow (MGD)</b>		<b>0.2</b>		<b>BOD<sub>5</sub></b>		<b>30</b>	<b>45</b>																				
<b>pH (S.U.)</b>	<b>6.5</b>		<b>8.5</b>	<b>TSS</b>		<b>30</b>	<b>45</b>																				
<b>Dissolved Oxygen</b>	<b>6.0</b>			<b>Nitrate/Nitrite</b>		<b>NL</b>																					
<b>Fecal Coliform (N/CML)</b>		<b>14</b>		<b>E. Coli (N/CML)</b>		<b>126</b>																					
<b>Total Phosphorus</b>		<b>NL</b>		<b>Total Nitrogen</b>		<b>NL</b>																					
<b>TKN</b>		<b>NL</b>																									
		Receiving Stream	<b>Potomac River</b>																								
		Basin	<b>Potomac River</b>																								
		Discharge Point (LAT)	<b>38° 20' 01" N</b>																								
		Discharge Point (LONG)	<b>77° 14' 08" W</b>																								

**DEQ  
WATER FACILITY  
INSPECTION REPORT  
PART 1**

Inspection date: **June 3, 2009** Date form completed: **June 24, 2009**  
 Inspection by: **Terry Nelson** Inspection agency: **DEQ NRO**  
 Time spent: **16 hours** Announced: **Yes**

Reviewed by:  6/30/09 Scheduled: **Yes**

Present at inspection: **Jason Cook, Chad Sullivan, Jeff Hockaday; KGCSA**

TYPE OF FACILITY:

**Domestic**

**Industrial**

☐ Federal

☐ Major

☐ Major

☐ Primary

☒ Nonfederal

☒ Minor

☐ Minor

☐ Secondary

Type of inspection:

☒ Routine

Date of last inspection: **N/A**

☐ Compliance/Assistance/Complaint

Agency:

☐ Reinspection

Population served: approx. **800 Winter/1600 Summer**

Connections served: approx. **400**

**Influent data is not sampled on a regular basis. Last influent TSS was during a high flow event.**

Last month average: (Effluent) Month/year: **April 2009**

Flow:	<b>0.039</b>	<b>MGD</b>	pH:	<b>8.4</b>	<b>S.U.</b>	TSS:	<b>2.9</b>	<b>mg/L</b>
BOD	<b>2.0</b>	<b>mg/L</b>	DO	<b>7.2</b>	<b>mg/L</b>	Nitrate/Nitrite	<b>1.3</b>	<b>mg/L</b>
TKN	<b>0.8</b>	<b>mg/L</b>	TN	<b>2.2</b>	<b>mg/L</b>	TP	<b>0.2</b>	<b>mg/L</b>
Fecal Coliform	<b>2</b>	<b>N/CML</b>	E. Coli	<b>1.4</b>	<b>N/CML</b>			

Quarter average: (Effluent) Months: **February to April 2009**

Flow:	<b>0.045</b>	<b>MGD</b>	pH:	<b>8.4</b>	<b>S.U.</b>	TSS:	<b>2.9</b>	<b>mg/L</b>
BOD	<b>2.9</b>	<b>mg/L</b>	DO	<b>8.3</b>	<b>mg/L</b>	Nitrate/Nitrite	<b>2.0</b>	<b>mg/L</b>
TKN	<b>1.1</b>	<b>mg/L</b>	TN	<b>3.2</b>	<b>mg/L</b>	TP	<b>0.2</b>	<b>mg/L</b>
Fecal Coliform	<b>2</b>	<b>N/CML</b>	E. Coli	<b>3.7</b>	<b>N/CML</b>			

DATA VERIFIED IN PREFACE

☒ Updated ☐ No changes

Has there been any new construction?

☐ Yes ☒ No

If yes, were plans and specifications approved?

☐ Yes ☐ No ☒ NA

DEQ approval date:

**(A) PLANT OPERATION AND MAINTENANCE**

1. Class and number of licensed operators: **Class III and trainee daily, Class I on call**
2. Hours per day plant is manned: **8 hours, 7day per week**
3. Describe adequacy of staffing. ☐ Good ☒ Average ☐ Poor
4. Does the plant have an established program for training personnel? ☒ Yes ☐ No
5. Describe the adequacy of the training program. ☐ Good ☒ Average ☐ Poor
6. Are preventive maintenance tasks scheduled? ☒ Yes ☐ No
7. Describe the adequacy of maintenance. ☐ Good ☒ Average ☐ Poor\*
8. Does the plant experience any organic/hydraulic overloading?  
If yes, identify cause and impact on plant: ☐ Yes ☒ No
9. Any bypassing since last inspection? ☐ Yes ☒ No
10. Is the standby electric generator operational? ☒ Yes ☐ No\* ☐ NA
11. Is the STP alarm system operational? ☒ Yes ☐ No\* ☐ NA
12. How often is the standby generator exercised? **Weekly**  
Power Transfer Switch? **Weekly**  
Alarm System? **Automatic self testing**
13. When was the cross connection control device last tested on the potable water service? **11-16-07**
14. Is sludge being disposed in accordance with the approved sludge disposal plan?  
☒ Yes ☐ No ☐ NA
15. Is septage received by the facility? ☐ Yes ☒ No  
Is septage loading controlled? ☐ Yes ☐ No ☒ NA  
Are records maintained? ☐ Yes ☐ No ☒ NA
16. Overall appearance of facility: ☒ Good ☐ Average ☐ Poor

Comments:

**4. Training is on the job, DEQ short school, or Sacramento courses.****13. Latest tag on device was from 2007, staff does not believe it has been tested since then.**

**(B) PLANT RECORDS**

1. Which of the following records does the plant maintain?
- |   |   |                             |  |
|---|---|-----------------------------|--|
| Operational Logs for each unit process                  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> NA            |
| Instrument maintenance and calibration                  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> NA            |
| Mechanical equipment maintenance                        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> NA            |
| Industrial waste contribution<br>(Municipal Facilities) | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> NA |
2. What does the operational log contain?
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Visual observations  | <input checked="" type="checkbox"/> Flow measurement    |
| <input checked="" type="checkbox"/> Laboratory results   | <input checked="" type="checkbox"/> Process adjustments |
| <input checked="" type="checkbox"/> Control calculations | <input type="checkbox"/> Other (specify)                |

Comments:

3. What do the mechanical equipment records contain?
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> As built plans and specs   | <input checked="" type="checkbox"/> Spare parts inventory |
| <input checked="" type="checkbox"/> Manufacturers instructions | <input type="checkbox"/> Equipment/parts suppliers        |
| <input checked="" type="checkbox"/> Lubrication schedules      | <input type="checkbox"/> Other (specify)                  |

Comments:

4. What do the industrial waste contribution records contain? (Municipal Only)
- |  |  |
|--|--|
| <input type="checkbox"/> Waste characteristics | <input type="checkbox"/> Locations and discharge types |
| <input type="checkbox"/> Impact on plant       | <input type="checkbox"/> Other (specify)               |

Comments: **No industrial contributors.**

5. Which of the following records are kept at the plant and available to personnel?
- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Equipment maintenance records | <input checked="" type="checkbox"/> Operational Log         |
| <input type="checkbox"/> Industrial contributor records           | <input checked="" type="checkbox"/> Instrumentation records |
| <input checked="" type="checkbox"/> Sampling and testing records  |   |

6. Records not normally available to plant personnel and their location: **See comments**

7. Were the records reviewed during the inspection? ☒ Yes ☐ No
8. Are the records adequate and the O & M Manual current? ☐ Yes ☒ No
9. Are the records maintained for the required 3-year time period? ☒ Yes ☐ No

Comments:

- 6. Operator log includes when major items are done by KGCSA maintenance staff. Maintenance department has the work orders for the major maintenance.**
- 8. Section 4 of the O&M Manual does not include information on the grit system and incorrectly describes the UV components.**

**(C) SAMPLING**

1. Do sampling locations appear to be capable of providing representative samples? ☒ Yes ☐ No\*
2. Do sample types correspond to those required by the VPDES permit? ☒ Yes ☐ No\*
3. Do sampling frequencies correspond to those required by the VPDES permit? ☒ Yes ☐ No\*
4. Are composite samples collected in proportion to flow? ☐ Yes ☒ No\* ☐ NA
5. Are composite samples refrigerated during collection? ☒ Yes ☐ No\* ☐ NA
6. Does plant maintain required records of sampling? ☒ Yes ☐ No\*
7. Does plant run operational control tests? ☒ Yes ☐ No

Comments:

4. **When plant discharges, it is a steady flow and sampler collects equal volumes at equal time intervals. For a steady flow and equal time intervals, this composite schedule is permitted.**

**(D) TESTING**

1. Who performs the testing? ☒ Plant ☒ Central Lab ☒ Commercial Lab  
 Name: **Plant does DO, pH, MLSS, TSS**  
**Dahlgren WWTP does Fecal Coliform**  
**Enviro Compliance does BOD<sub>5</sub>, Nitrogen series, Phosphorus series, and E. Coli**

**If plant performs any testing, complete 2-4.**

2. What method is used for chlorine analysis? **U/V disinfection**
3. Does plant appear to have sufficient equipment to perform required tests? ☒ Yes ☐ No\*
4. Does testing equipment appear to be clean and/or operable? ☒ Yes ☐ No\*

Comments:

**(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY**

1. Is the production process as described in the permit application? (If no, describe changes in comments)  
☐ Yes ☐ No ☒ NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)  
☐ Yes ☐ No ☒ NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:  
☐ Yes ☐ No\* ☒ NA

Comments:



**UNIT PROCESS: Sewage Pumping**1. Name of station: **Influent Lift Station**

2. Location (if not at STP):

3. Following equipment operable:

- |                      |   |                              |  |
|----------------------|---|------------------------------|--|
| a. all pumps         | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |  |
| b. ventilation       | <input type="checkbox"/> Yes            | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> NA |
| c. control system    | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |  |
| d. sump pump         | <input type="checkbox"/> Yes            | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> NA |
| e. seal water system | <input type="checkbox"/> Yes            | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> NA |

4. Reliability considerations:

- |                                    |   |                              |  |
|------------------------------------|---|------------------------------|--|
| a. Class                           | <input checked="" type="checkbox"/> I   | <input type="checkbox"/> II  | <input type="checkbox"/> III           |
| b. Alarm system operable:          | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |  |
| c. Alarm conditions monitored:     |   |                              |  |
| 1. high water level                | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |  |
| 2. high liquid level in dry well   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> NA |
| 3. main electric power             | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> NA            |
| 4. auxiliary electric power        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> NA            |
| 5. failure of pump motors to start | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> NA            |
| 6. test function                   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> NA |
| 7. other                           | <input type="checkbox"/> Yes            | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> NA |

d. Backup for alarm system operational: ☐ Yes ☐ No ☒ NAe. Alarm signal reported to (identify): **Control room**

f. Continuous operability provisions:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> generator | <input type="checkbox"/> two sources of power                         |
| <input type="checkbox"/> portable pump        | <input type="checkbox"/> 1 day storage <input type="checkbox"/> other |

- |                              |                               |  |
|------------------------------|-------------------------------|--|
| 5. Does station have bypass: | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| a. evidence of bypass use    | <input type="checkbox"/> Yes* | <input type="checkbox"/> No            |
| b. can bypass be disinfected | <input type="checkbox"/> Yes  | <input type="checkbox"/> No            |
| c. can bypass be measured    | <input type="checkbox"/> Yes  | <input type="checkbox"/> No            |

6. How often is station checked? **Control panel in office checked several times daily.  
Physically checked 2-3 times per week.**7. General condition: ☒ Good ☐ Fair ☐ Poor

## Comments:

- **Pump station is outdoors with a single wet well.**
- **The station has two 36 Hp submersible pumps rated for 486 gpm each.**
- **The pumps are equipped with variable frequency drive, with lead and lag pumps automatically alternating each cycle.**
- **There are mercury float switches for pump off, lead pump on, and lag pump on.**

**UNIT PROCESS: Screening/Comminution**

1. Number of Units:                      Manual:                      **1**                      Mechanical:                      **1**
- Number in operation:                      Manual:                                           Mechanical:                      **1**
2. Bypass channel provided:                      ☒ Yes                      ☐ No\*
- Bypass channel in use:                      ☐ Yes                      ☒ No
3. Area adequately ventilated:                      ☒ Yes                      ☐ No\* **System is outdoors**
4. Alarm system for equipment failure or overloads:                      ☒ Yes                      ☐ No\*
5. Proper flow distribution between units:                      ☐ Yes                      ☐ No                      ☒ NA
6. How often are units checked and cleaned?                      **Checked daily, washed as needed**
7. Cycle of operation:                      **Continuous**
8. Volume of screenings removed: **30 gallons per month**
9. General condition:                      ☒ Good                      ☐ Fair                      ☐ Poor

## Comments:

- **Manual bar screen is in the bypass channel and is used when grinder is down for repair.**
- **The grinder utilizes dual shafts with intermeshed cutters and spacers.**
- **The flow then goes through an auger to remove and dewater large particles.**
- **The manual bar screen accumulates leaves from nearby trees and needed to be cleaned.**

**UNIT PROCESS: Grit Removal**

1. Number of units:                      **1**                      In operation:                      **1**
2. Unit adequately ventilated:                      ☒ Yes                      ☐ No\* **Unit is outdoors**
3. Operation of grit collection equipment:                      ☐ Manual                      ☐ Time clock                      ☒ Continuous duty
4. Proper flow distribution between units:                      ☐ Yes                      ☐ No\*                      ☒ NA
5. Daily volume of grit removed:                      **Variable**
6. All equipment operable:                      ☒ Yes                      ☐ No\*
7. General condition:                      ☒ Good                      ☐ Fair                      ☐ Poor

## Comments:

- **Plant has a vortex grit separator.**
- **The grit classifier is activated based on head pressure.**

**UNIT PROCESS: Flow Equalization**

1. Type: ☒ In-line                      Number of cells: **1**  
☐ Side-line  
☐ Spill pond
2. What unit process does it precede? **SBR**
3. Is volume adequate? ☐ Yes ☐ No
4. Mixing: ☐ None ☒ Diffused air ☐ Fixed mechanical ☐ Floating mechanical
5. Condition of mixing equipment: ☐ Good ☐ Average ☐ Poor
6. How drawn off?  
A. Pumped from: ☐ Surface ☒ Sub-surface ☐ Adjustable  
B. Weir ☐ Surface ☐ Sub-surface
7. Is containment structure in good condition? ☐ Yes ☐ No
8. Are the facilities to flush solids and grease from basin walls adequate?  
☐ Yes ☐ No ☐ NA
9. Are there facilities for withdrawing floating material and foam?  
☐ Yes ☐ No
10. How are solids removed? ☐ Drain down ☐ Drag line ☐ Other ☒ NA  
Is it adequate? ☐ Yes ☐ No
11. Is the emergency overflow in good condition? ☐ Yes ☐ No ☒ NA
12. Are the depth gauges in good condition? ☐ Yes ☐ No ☐ NA

## Comments:

- **This is the pre-equalization basin, which currently is not used.**
- **The tank is 38' diameter, 24' deep, and holds 200,000 gallons.**
- **The tank is equipped with a high level alarm.**
- **It can serve to dampen effects of low flow and high flow, uniformly mix waste, and provide some BOD removal (~10% removal).**

**UNIT PROCESS: Sequential Batch Reactors (SBR)**

1. Number of reactors: ☐ 1 ☒ 2 ☐ 3  
Volume of batch discharge: **50,000 gpd**
2. Number of batches per day: **4**  
Or number of days between batches:
3. Mode of operation: ☐ BOD removal ☒ Ammonia (including BOD) removal
4. Method of cycle control: ☒ Microprocessor ☐ Manual ☐ Floats and timers
5. Type of aeration: ☒ Diffusers ☐ Floating mechanical ☐ Jet aeration
6. Cycle Times (minutes):
  - a. Fill – Anoxic/Mix: **90 (Mix Fill)**
  - b. Fill – Aerated: **120 (React Fill)**  
DO controlled: **Yes**
  - c. React: **60 (React)**
  - d. Settle: **60 (Settle)**
  - e. Draw: **30 (Decant)**
  - f. Idle: **Part of Decant**  
Idle aeration cycle minutes: **Off**  
DO controlled: **No**
7. Type of withdrawal mechanism:
  - a. ☐ Fixed pipe ☐ Automatic ☐ Manual
  - b. ☒ Floating weir ☒ Automatic ☐ Manual
8. Waste frequency: Once per cycle ☒ Yes ☐ No  
Other frequency:
9. Waste by: ☐ Gravity ☒ Pump ☐ Both:
10. Condition of Reactor:
  - a. Foam on surface: ☐ Yes ☒ No
  - b. Color of foam: ☐ White sudsy ☒ Shiny dark tan ☐ Very dark brown
  - c. Scum on surface: ☐ Yes ☒ No  
If present, is scum decanted: ☐ Yes ☐ No
  - d. Mixed liquor characteristics:
 

Odor	<b>None</b>
pH	<b>7.2 SU</b>
MLSS	<b>3300 mg/L</b>
Color	<b>Light tan</b>
Settleability	<b>260 ml/L</b>
DO	<b>1.0 mg/L</b>
11. Effluent characteristics: **Clear**
12. General condition: ☒ Good ☐ Fair ☐ Poor

## Comments:

- **Each reactor is 35' x 35' x 19' and holds 154,000 gallons.**
- **Alum is added during the React Fill and React Phases.**
- **The Decant phase includes Decant, Wasting, and Idle. Wasting is 48 seconds per cycle.**
- **Two 25 HP blowers provide air for the fixed grid air diffusers.**

**UNIT PROCESS: Sludge Pumping**

1. Number of Pumps: **2** In operation: **2**
2. Type of sludge pumped: ☐ Primary ☒ Secondary ☐ Return Activated  
☐ Combination ☐ Other:
3. Type of pump: ☐ Plunger ☐ Diaphragm ☐ Screwlift ☐ Progressing Cavity  
☒ Centrifugal ☐ Other:
4. Mode of operation: ☐ Manual ☒ Automatic ☐ Other (explain):
5. Sludge volume pumped: **1000 gals/day**
6. Alarm system for equipment failures or overloads operational: ☒ Yes ☐ No ☐ NA
7. General condition: ☒ Good ☐ Fair ☐ Poor

## Comments:

- **Each SBR basin has a 2 HP pump to deliver waste sludge to aerobic digester.**
- **Each pump delivers 80 gpm.**

**UNIT PROCESS: Flow Equalization**

1. Type: ☒ In-line ☐ Side-line ☐ Spill pond Number of cells: **1**
2. What unit process does it precede? **UV**
3. Is volume adequate? ☒ Yes ☐ No
4. Mixing: ☐ None ☒ Diffused air ☐ Fixed mechanical ☐ Floating mechanical
5. Condition of mixing equipment: ☐ Good ☒ Average ☐ Poor
6. How drawn off?  
 A. Pumped from: ☐ Surface ☒ Sub-surface ☐ Adjustable  
 B. Weir ☐ Surface ☐ Sub-surface
7. Is containment structure in good condition? ☒ Yes ☐ No
8. Are the facilities to flush solids and grease from basin walls adequate?  
☒ Yes ☐ No ☐ NA
9. Are there facilities for withdrawing floating material and foam?  
☐ Yes ☒ No
10. How are solids removed? ☐ Drain down ☐ Drag line ☒ Other ☐ NA  
 Is it adequate? ☐ Yes ☒ No
11. Is the emergency overflow in good condition? ☐ Yes ☐ No ☒ NA
12. Are the depth gauges in good condition? ☒ Yes ☐ No ☐ NA

## Comments:

- **This is the post-equalization basin. It serves to provide a uniform flow to the UV system and aerate the effluent.**
  - **The tank is 23'x35'x19' and holds 100,000 gallons.**
  - **The tank is equipped with a high level alarm.**
- 5. Significant alga was growing in the tank. Staff pressure washes the tank each week in the summer.**
- 10. Staff uses buckets and ropes to remove solids and alga removed during pressure washing. DEQ recommends KGCSA consider using trash pumps or other means capable of handling the solids and algae.**

**UNIT PROCESS: Flow Measurement**[ ] Influent    [ ] Intermediate    [ **X** ] Effluent

1. Type measuring device:            **Magnetic meter**
2. Present reading:                    **No discharge**
3. Bypass channel:                    [ ] Yes                    [ **X** ] No  
Metered:                                [ ] Yes                    [ ] No
4. Return flows discharged upstream from meter: [ ] Yes                    [ **X** ] No  
Identify:
5. Device operating properly:                    [ **X** ] Yes                    [ ] No\*
6. Date of last calibration:                    **02/26/09**
7. Evidence of following problems:
  - a. obstructions                                [ ] Yes\*                    [ ] No
  - b. grease                                        [ ] Yes\*                    [ ] No
8. General condition:                    [ **X** ] Good                    [ ] Fair    [ ] Poor

## Comments:

2. **DO and pH samples were collected during effluent flow. Discharge had ceased by the time the plant inspection began.**
7. **The effluent can not be observed in the meter vault but can be observed entering the UV system.**



**UNIT PROCESS: Ultraviolet (UV) Disinfection**

- |  |  |   |  |
|--|--|---|--|
| 1. Number of UV lamps/assemblies:                                  | <b>48 lamps</b>                          | In operation:                           | <b>40</b>                              |
| 2. Type of UV system and design dosage:                            | <b>Infilco</b>                           |   |  |
| 3. Proper flow distribution between units:                         | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            | <input checked="" type="checkbox"/> NA |
| 4. Method of UV intensity monitoring:                              | <b>Submersed sensor</b>                  |   |  |
| 5. Adequate ventilation of ballast control boxes:                  | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            | <input type="checkbox"/> NA            |
| 6. Indication of on/off status of all lamps provided:              | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 7. Lamp assemblies easily removed for maintenance:                 | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 8. Records of lamp operating hours and replacement dates provided: | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 9. Routine cleaning system provided:                               | <input type="checkbox"/> Yes             | <input checked="" type="checkbox"/> No* |  |
| Operate properly:  | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            |  |
| Frequency of routine cleaning:                                     |  |   |  |
| 10. Lamp energy control system operate properly:                   | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 11. Date of last system overhaul:                                  |  |   |  |
| a. UV unit completely drained                                      | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            |  |
| b. all surfaces cleaned  | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            |  |
| c. UV transmissibility checked                                     | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            |  |
| d. output of selected lamps checked                                | <input type="checkbox"/> Yes             | <input type="checkbox"/> No*            |  |
| e. output of tested lamps  |  |   |  |
| f. total operating hours, oldest lamp/assembly                     |  |   |  |
| g. number of spare lamps and ballasts available:                   | lamps: <b>10</b>                         | ballasts: <b>0</b>                      |  |
| 12. UV protective eyeglasses provided:                             | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 13. General condition:   | <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Fair           | <input type="checkbox"/> Poor          |

## Comments:

- **There are 2 banks with 6 modules per bank. Each module has 4 lamps.**
- **Each bank had a module that was out of service.**
- **The control system displayed intensity levels of 0% for Bank 1 and 99.3% for Bank 2.**
- **The intensity sensor for Bank 1 was sent out for repair several months ago.**
- **Mr. Hockaday stated he has contacted the repair company several times asking for a return date.**
- **Staff said the standard procedure was clean the bulbs when the sensor reads 60% or lower. This is not in the O&M manual available at DEQ NRO offices.**
- 3. **The banks are in series with all effluent flowing through both banks.**
- 9. **The quartz sleeves are manually cleaned each month with CLR.**

**UNIT PROCESS: Effluent/Plant Outfall**

1. Type Outfall                    ☐ Shore based            ☒ Submerged
2. Type if shore based:        ☐ Wingwall                ☐ Headwall    ☐ Rip Rap
3. Flapper valve:                ☐ Yes            ☐ No    ☒ NA
4. Erosion of bank:            ☐ Yes            ☐ No    ☐ NA
5. Effluent plume visible?    ☐ Yes\*           ☐ No
6. Condition of outfall and supporting structures:    ☐ Good            ☐ Fair    ☐ Poor\*
7. Final effluent, evidence of following problems:
  - a. oil sheen                    ☐ Yes\*            ☐ No
  - b. grease                        ☐ Yes\*            ☐ No
  - c. sludge bar                   ☐ Yes\*            ☐ No
  - d. turbid effluent              ☐ Yes\*            ☐ No
  - e. visible foam                ☐ Yes\*            ☐ No
  - f. unusual color                ☐ Yes\*            ☐ No

Comments:

- **Outfall is in the middle of the Potomac River and can not be observed.**

**UNIT PROCESS: Aerobic Digestion**


1. Number of units: **1** In operation: **1**
2. Type of sludge treated [ ] Primary [ **X** ] WAS [ ] Other
3. Frequency of sludge application to digestors: **Each SBR cycle**
4. Supernatant return rate: **None**
5. pH adjustment provided: [ ] Yes [ **X** ] No  
Utilized: [ ] Yes [ ] No [ **X** ] NA
6. Tank contents well-mixed and relatively free of odors: [ **X** ] Yes [ ] No\*
7. If diffused aeration is used, do diffusers require frequent cleaning?  
[ ] Yes [ **X** ] No [ ] NA
8. Location of supernatant return: [ ] Head [ ] Primary [ ] Other
9. Process control testing:  
a. reduction of volatile solids [ ] Yes [ **X** ] No  
b. pH [ ] Yes [ **X** ] No  
c. alkalinity [ ] Yes [ **X** ] No  
d. dissolved oxygen [ ] Yes [ **X** ] No
10. Foaming problem present: [ ] Yes\* [ **X** ] No
11. Signs of short-circuiting or overloads: [ ] Yes\* [ **X** ] No
12. General condition: [ **X** ] Good [ ] Fair [ ] Poor

## Comments:

- 8. Operators do not decant digester as supernatant adversely affected phosphorus concentrations.**
- **The tank is 23'x 35' x 17' with a minimum liquid depth of 2 feet to protect aeration equipment.**
  - **A 5 HP submersible pump transfers digested sludge to a sludge holding tank.**
  - **The holding tank is 23'x 35' x 19' with fine bubble aeration.**
  - **A 1.5 HP submersible pump is used to transfer holding tank contents to a tank truck.**
  - **The sludge is taken to the Dahlgren WWTP (VA0026514) for final processing.**
  - **Wash water from the truck pad drains to the plant headworks.**

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
LABORATORY INSPECTION REPORT**

10/01

<b>FACILITY NO:</b> VA0092134	<b>INSPECTION DATE:</b> June 3, 2009	<b>PREVIOUS INSPECTION:</b> NA	<b>PREVIOUS EVALUATION:</b> NA	<b>TIME SPENT:</b> 8 hours
<b>NAME/ADDRESS OF FACILITY:</b> Fairview Beach WWTP 7152 Potomac Landing Drive King George, VA 22485		<b>FACILITY CLASS:</b>	<b>FACILITY TYPE:</b>	<b>UNANNOUNCED INSPECTION?</b>
		( ) MAJOR	( ) MUNICIPAL	( ) YES
		(X) MINOR	( ) INDUSTRIAL	(X) NO
		( ) SMALL	( ) FEDERAL	<b>FY-SCHEDULED INSPECTION?</b>
		( ) VPA/NDC	( ) COMMERCIAL LAB	(X) YES
				( ) NO
<b>INSPECTOR(S):</b> Terry Nelson		<b>REVIEWERS:</b> 	<b>PRESENT AT INSPECTION:</b> Jason Cook, Chad Sullivan, Jeff Hockaday; KGCSA	

LABORATORY EVALUATION	DEFICIENCIES?	
	Yes	No
LABORATORY RECORDS		X
GENERAL SAMPLING & ANALYSIS	X	
LABORATORY EQUIPMENT	X	
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES		X
TSS ANALYSIS PROCEDURES	X	
FECAL COLIFORM ANALYSIS PROCEDURES	X	
E. Coli, BOD <sub>5</sub> , NITROGEN, PHOSPHORUS ANALYSIS PROCEDURES		X

QUALITY ASSURANCE/QUALITY CONTROL			
Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
Y	REPLICATE SAMPLES	TSS	5% of samples
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH	Each day
N	SPLIT SAMPLES		
Y	SAMPLE BLANKS	TSS	Each day
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency ( ) NA	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency ( ) NA	

**LABORATORY RECORDS SECTION**

LABORATORY RECORDS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING DATE	<input checked="" type="checkbox"/>	ANALYSIS DATE	<input type="checkbox"/>	CONT MONITORING CHART
<input checked="" type="checkbox"/>	SAMPLING TIME	<input checked="" type="checkbox"/>	ANALYSIS TIME	<input checked="" type="checkbox"/>	INSTRUMENT CALIBRATION
<input checked="" type="checkbox"/>	SAMPLE LOCATION	<input checked="" type="checkbox"/>	TEST METHOD	<input checked="" type="checkbox"/>	INSTRUMENT MAINTENANCE
				<input checked="" type="checkbox"/>	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING SCHEDULES	<input checked="" type="checkbox"/>	CALCULATIONS	<input checked="" type="checkbox"/>	ANALYSIS PROCEDURES
-------------------------------------	--------------------	-------------------------------------	--------------	-------------------------------------	---------------------

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	<input checked="" type="checkbox"/>		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	<input checked="" type="checkbox"/>		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: <b>April 2009</b>	<input checked="" type="checkbox"/>		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	<input checked="" type="checkbox"/>		

**GENERAL SAMPLING AND ANALYSIS SECTION**

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	<input checked="" type="checkbox"/>		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	<input checked="" type="checkbox"/>		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	<input checked="" type="checkbox"/>		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?		<input checked="" type="checkbox"/>	
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: <b>EnviroCompliance, Ashland, VA: BOD, Nitrogen series, Phosphorus series, E. Coli Dahlgren WWTP: Fecal Coliform</b>	<input checked="" type="checkbox"/>		

**LABORATORY EQUIPMENT SECTION**

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?		<input checked="" type="checkbox"/>	
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	<input checked="" type="checkbox"/>		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			<input checked="" type="checkbox"/>
ARE ANALYTICAL BALANCE(S) ADEQUATE?		<input checked="" type="checkbox"/>	

ANALYST:	Jason Cook	VPDES NO.	VA0092134
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Parameter: Dissolved Oxygen  
Method: Electrode  
Facility Elevation - 100 ft  
01/08

Meter: YSI Model 550A

**METHOD OF ANALYSIS:**

X	18 <sup>th</sup> Edition of Standard Methods-4500-O G
	21 <sup>st</sup> or Online Editions of Standard Methods-4500-O G (01)

**DO is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]**

Y	N
In	situ
X	
X	
X	
X	
X	
X	
In	situ
X	
X	
X	
NA	
NA	
NA	

- 1) If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [B.3]
- 2) Are meter and electrode operable and providing consistent readings? [3]
- 3) Is membrane in good condition without trapped air bubbles? [3.b]
- 4) Is correct filling solution used in electrode? [Mfr.]
- 5) Are water droplets shaken off the membrane prior to calibration? [Mfr.]
- 6) Is meter calibrated before use or at least daily? [Mfr.]
- 7) Is calibration procedure performed according to manufacturer's instructions? [Mfr.]
- 8) Is sample stirred during analysis? [Mfr.]
- 9) Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]
- 10) Is meter stabilized before reading D.O.? [Mfr.]
- 11) Is electrode stored according to manufacturer's instructions? [Mfr.]
- 12) Is a duplicate sample analyzed after every 20 samples if citing 18<sup>th</sup> or 19<sup>th</sup> Edition [1020 B.6] or daily if citing 20<sup>th</sup> or 21<sup>st</sup> Edition [Part 1020] Note: Not required for *in situ* samples.
- 13) If a duplicate sample is analyzed, is the reported value for that sampling event, the average concentration of the sample and the duplicate? [DEQ]
- 14) If a duplicate sample is analyzed, is the relative percent difference (RPD) < 20? [18<sup>th</sup> ed. Table 1020 I; 21<sup>st</sup> ed. DEQ]

PROBLEMS:	No problems noted.
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**Final Effluent DO readings**

DEQ 8.61 mg/L 21.4° C  
KGCSA 8.59 mg/L 21.5° C

ANALYST:	Jason Cook	VPDES NO	VA0092134
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Parameter: Hydrogen Ion (pH)

Method: Electrometric

01/08

Meter: **Oakton pH 110**

**METHOD OF ANALYSIS**

<b>X</b>	18 <sup>th</sup> Edition of Standard Methods-4500-H-B
	21 <sup>st</sup> or On-Line Edition of Standard Methods-4500-H-B (00)

**pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]**

	Y	N
1) Is a certificate of operator competence or initial demonstration of capability available for <u>each analyst/operator</u> performing the analysis? <b>NOTE:</b> Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be $\pm 0.1$ SU of the known concentration of the sample. [SM 1020 B.1]	X	
2) Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]	X	
3) Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	X	
4) Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	X	
5) After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should be within $\pm 0.1$ SU. [4.a]	X	
6) Do the buffer solutions appear to be free of contamination or growths? [3.1]	X	
7) Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]	X	
8) Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	NA	
9) For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]	X	
10) Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]	X	
11) Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]	X	
12) Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]	X	
13) Is the sample stirred gently at a constant speed during measurement? [4.b]	X	
14) Does the meter hold a steady reading after reaching equilibrium? [4.b]	X	
15) Is a duplicate sample analyzed after every 20 samples if citing 18 <sup>th</sup> or 19 <sup>th</sup> Edition [1020 B.6] or daily for 20 <sup>th</sup> or 21 <sup>st</sup> Edition [Part 1020] Note: Not required for <i>in situ</i> samples.	NA	
16) Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]	NA	
17) Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]	NA	

PROBLEMS:	No problems noted.
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**Final Effluent pH readings**

DEQ 8.11 mg/L 21.4° C

KGCSA 8.06 mg/L 21.2° C

ANALYST:	<b>Chad Sullivan</b>	VPDES NO	<b>VA0092137</b>
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Parameter: Total Suspended Solids  
Method: Gravimetric, 103-105 °C  
01-08

METHOD OF ANALYSIS:

<b>X</b>	18 <sup>th</sup> Edition of Standard Methods-2540-D
	21 <sup>st</sup> or On-Line Edition of Standard Methods-2540-D (97)

**TSS is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]**

- 1) Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known TSS with each sample having appropriate % recovery. [SM 1020 B.1]
- 2) Is glass fiber filter a Whatman Grade 934AH, Pall Type A/E, Millipore Type AP40, or Scientific Specialties grade 161, Environmental Express Pro Weigh, or equivalent? [2]
- 3) Is a desiccator, drying oven for operating at 103° - 105° C, analytical balance, filtration apparatus, and suction flask available and in operable condition? [2]
- 4) Does desiccator have active color indicating desiccant? [2]
- 5) Is the analytical balance capable of weighing to 0.1 mg? [2]
- 6) To prepare filter, is it washed under vacuum, with 3 successive 20 mL portions of reagent-grade water? [3.a]
- 7) Is the washed filter dried in oven at 103° - 105° C for at least 1 hour, cooled in desiccator, and weighed? Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? **NOTE:** See question 19. **(MUST DOCUMENT)** [3.a]
- 8) After drying, is filter, Gooch crucible and/or weighing dish stored in desiccator until needed and then reweighed prior to use? [3.a]
- 9) Is filter or Gooch crucible handled with forceps or tongs? [Permit]
- 10) Is sample well-mixed prior to filtration? [3.c;]
- 11) Is sample volume measured using Class A graduated cylinder? [SM 1070 B.2]
- 12) Is filter seated with reagent grade water prior to filtering sample? [3.c]
- 13) Is sample filtered under vacuum? [3.c]
- 14) Is sample filtration time limited to 10 minutes? Documentation is required. [3.b]
- 15) After sample is filtered, is filter washed with 3 successive 10 mL portions of reagent-grade water? [3.c]
- 16) Is filter, Gooch crucible and/or weighing dish dried for at least one hour at 103° - 105° C and is drying time documented? [3.c]
- 17) Is filter, Gooch crucible and/or weighing dish desiccated until they reach room temperature prior to weighing it? [3.c]
- 18) Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? **(MUST DOCUMENT)** [3.c]

Y	N
	<b>X</b>
<b>X</b>	
<b>X</b>	
<b>X</b>	
<b>X</b>	
<b>X</b>	
<b>X</b>	
<b>X</b>	
	<b>X</b>
<b>X</b>	
<b>X</b>	
<b>X</b>	
	<b>X</b>
<b>X</b>	
<b>X</b>	
<b>X</b>	



	Y	N
19) If sufficiency of the drying time is cited, is it checked periodically? (VPDES permit holders conducting their testing must verify the adequacy of drying time by documented drying-cooling-weighting cycle once per year for each outfall. Commercial or centralized laboratories must maintain records for each client/outfall documenting drying time adequacy with drying-cooling-weighting cycle. This may also be applied to filter preparation. These records must be updated annually.) [Permit]	X	
20) Was filter yield between 10.0 mg and 200 mg (18 <sup>th</sup> ), 2.5 mg and 200 mg (21 <sup>st</sup> ), or is at least 1000 mLs of sample filtered? [3.b]	X	
21) Is the TSS of the sample calculated correctly? [4]	X	
$\text{TSS (mg/L)} = \frac{(A - B) \times 1000 \text{ mL/L}}{\text{sample volume (mL)}}$ <p>A= weight of filter + dried residue (mg) B= weight of filter (mg)</p>		
22) Is a duplicate sample analyzed after every 20 samples if citing 18 <sup>th</sup> or 19 <sup>th</sup> Edition [1020 B.6] or after every 10 samples for 20 <sup>th</sup> or 21 <sup>st</sup> Edition [2540 D.3.c]		X
23) Do the results of the duplicate samples agree within 5% of their average? [3.c]	X	

COMMENTS:	<b>TSS for Oakland Park STP (VA0086789) and Fairview Beach are analyzed here.</b>
PROBLEMS:	<b>19) Filters were dried for 60 minutes, cooled, weighed, dried again for 30 minutes. 22) Every 20<sup>th</sup> sample for each plant is duplicated but not every 20<sup>th</sup> sample processed. For May, the duplicate was the 25<sup>th</sup> sample processed that month.</b>

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION**  
**SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET**  
 Revised 03/08 [40 CFR, Part 136.3, Table II]

FACILITY NAME:		Fairview Beach WWTP				VPDES NO	VA0092134	DATE:	June 3, 2009				
PARAMETER	APPROVED	HOLDING TIMES			SAMPLE CONTAINER			PRESERVATION					
		MET?	LOGGED?		ADEQ. VOLUME	APPROP. TYPE	APPROVED	MET?		CHECKED?			
			Y	N				Y	N		Y	N	Y
BOD5 & CBOD5	48 HOURS	X		X		X				X			
TSS	7 DAYS	X		X		X				X			
FECAL COLIFORM	6 HRS & 2 HRS TO PROCESS	X		X		X					X		X
E. Coli	6 HRS & 2 HRS TO PROCESS	X		X		X					X		X
pH	15 MIN.	X		X		X				N/A	X		X
DISSOLVED O <sub>2</sub>	15 MIN./IN SITU	X		X		X				N/A	X		X
TEMPERATURE	IMMERSION STAB.	X		X		X				N/A	X		X
AMMONIA	28 DAYS	X		X		X				6° C+H <sub>2</sub> SO <sub>4</sub> pH<2 DECHLOR	X		X
TKN	28 DAYS	X		X		X				6° C+H <sub>2</sub> SO <sub>4</sub> pH<2 DECHLOR	X		X
NITRATE	48 HOURS	X		X		X				6° C	X		X
NITRITE	48 HOURS	X		X		X				6° C	X		X
PHOSPHATE, ORTHO	48 HOURS	X		X		X				FILTER, 6° C	X		X
TOTAL PHOSPHORUS	28 DAYS	X		X		X				6° C+H <sub>2</sub> SO <sub>4</sub> pH<2	X		X

COMMENTS:	
PROBLEMS:	<p>1. Chain of Custody forms for Fecal Coliform samples do not indicate transported on ice or sample temperature upon receipt at Dahlgren WWTP.</p> <p>2. One of thirteen Chain of Custody forms for E. Coli samples does not show temperature upon sample receipt at Envirocompliance laboratories.</p>

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
ANALYTICAL BALANCE CHECK SHEET  
09/05

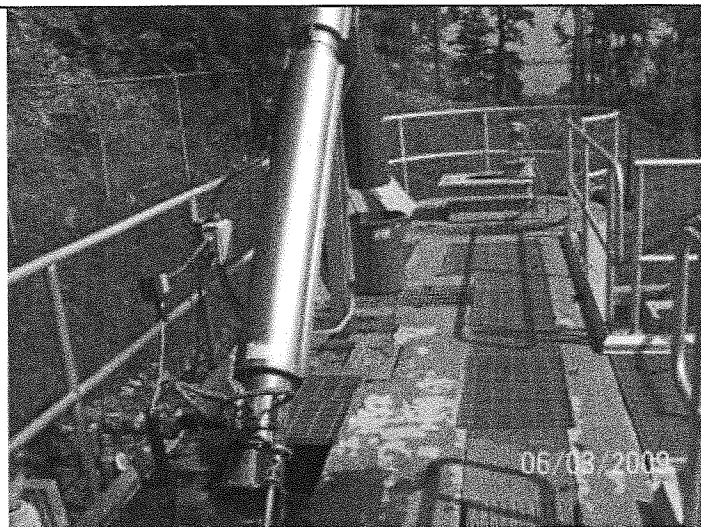
FACILITY NAME:		Fairview Beach WWTP		VPDES NO	VA0092134	DATE:	June 3, 2009
ANALYTICAL BALANCE 1							
SPECIFICATION/TYPE/USE: Mettler AE200							
QUESTION:		YES	NO	DATE/COMMENT			
BALANCE SERVICED YEARLY? [SM1020 C.1; Permit]		X		02/26/2009			
BALANCE LEVEL? [Permit]		X					
BALANCE ZEROED BEFORE USE? [Permit]		X					
BALANCE OPERATED PROPERLY? [Mfr.]		X					
BALANCE LOCATION APPROPRIATE? [Permit]		X					
BALANCE CHECKED DAILY WITH 2 CERTIFIED WEIGHTS? [SM1020; Permit]		X		Checked with 1 gram and 20 grams			
CLASS 1-2 WEIGHTS RECERTIFIED YEARLY? [NIST]			X	Tag on weights was 02/01/2008			
BALANCE SURFACES CLEAN? [Permit]		X					
DEQ BALANCE CHECK:							
DEQ BALANCE CHECK:		DEQ BALANCE CHECK					
DEQ 10 gm Wt.	Weight: 10.0000	DEQ 1 gm Wt.	Weight: 1.0000				
Problems: No documentation was provided so show that the accuracy of the check weights has been verified within past 12 months.							

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION**  
**EQUIPMENT TEMPERATURE LOG/THERMOMETER CALIBRATION CHECK SHEET**  
01-08

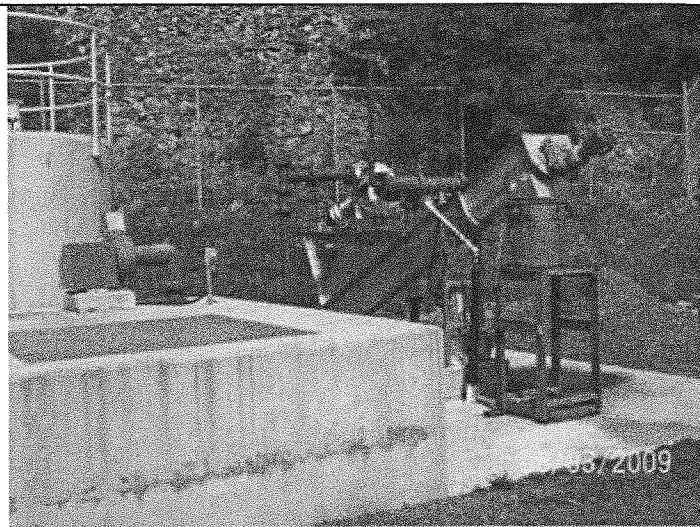
FACILITY NAME:		Fairview Beach WWTP		VPDES NO:		VA0092134		DATE:		June 3, 2009				
EQUIPMENT	RANGE	IN RANGE		INSPECTION READING °C		CHECK & LOG DAILY		CORRECT INCREMENT		ANNUAL THERMOMETER VERIFICATION				
										Is the NIST/NIST Traceable Reference Thermometer within Manufacturer's expiration date or recertified yearly?		DATE CHECKED	MARKED	
		Y	N	Y	N	Y	N	Y	N					
		SAMPLE REFRIGER.	1-6° C		X	7.4	7.5					2/26/09	X	
AUTO SAMPLER	1-6° C	X		-0.5	0					2/26/09	X		+0.2	-4
REAGENT REFRIGER.	1-6° C													
pH METER	± 1° C	X								2/06/09	X		-0.4	22.0
DO METER	± 1° C	X								2/26/09	X		-0.1	22.3
OUTFALL THERMOMETER	± 1° C													
BOD INCUBATOR	20° C ± 1° C													
INCUBATOR	35 ± .5° C													
WATER BATH	44.5 ± .2° C													
O & G WATER BATH	70 ± 2° C													
Hg WATER BATH	95° C													
SOLIDS DRYING OVEN	103-105° C		X	100.8	103					2/26/09	X		0	108
AUTOCCLAVE	121° C IN 30 MIN													
HOT AIR STERILIZING	170 ± 10° C													

**PROBLEMS:**

1. Sample refrigerator did not have a thermometer inside. Fairview Beach staff filled a water bottle and placed it in the refrigerator. After about 20 minutes, the temperature was checked. The refrigerator temperature must be monitored.
2. The plant staff uses the solids drying oven's Isotemp thermometer for readings. The Fisher digital thermometer on top of the oven had nothing to indicate comparison to a NIST thermometer, but it read 100.3° C.



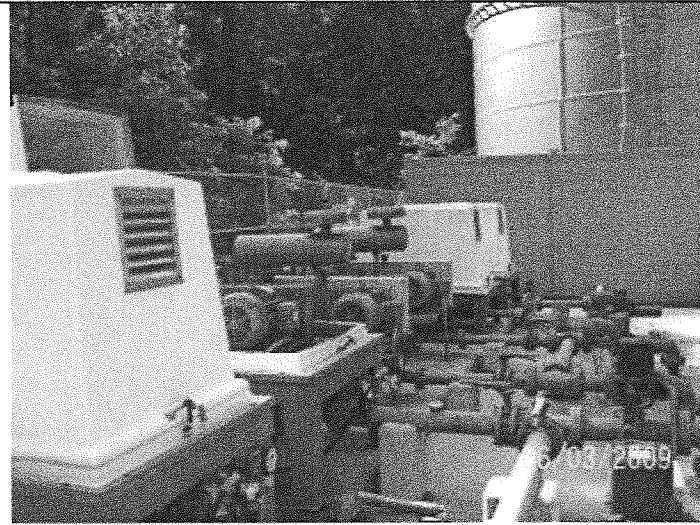
1) Screens and grit separation.



2) Grit dewatering.



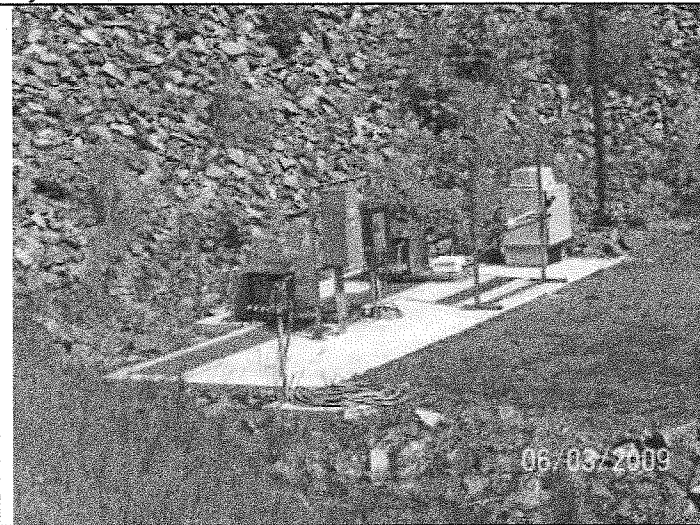
3) SBR Unit settling.



4) Aeration blowers.



5) EQ tank after SBRs



6) UV system

Fairview Beach WWTP	VPDES Permit No VA0092134
Photos by Terry Nelson	June 3, 2009
Layout by Terry Nelson	Page 1 of 1

To: Joan Crowther  
From: Jennifer Carlson

Date: October 2, 2012  
Subject: Planning Statement for Fairview Beach Wastewater Treatment Plant  
Permit Number: VA0092134

**Information for Outfall 001:**

Discharge Type: Municipal  
Discharge Flow: 0.2 MGD  
Receiving Stream: Potomac River  
Latitude / Longitude: 38°19'54"/77°14'4"  
Rivermile: 67.6  
Streamcode: 1aPOT  
Waterbody: Basin Name: POTOH (Lower Potomac River Oligohaline); Basin Code: 02140101  
Water Quality Standards: Designated Use II (Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting)

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges to the oligohaline portion of the Potomac River, which falls under Maryland's jurisdiction. Maryland Department of Natural Resources has a surface water quality monitoring station, RET2.2, located approximately 1.6 miles downstream of the outfall for Fairview Beach WWTP. Additionally, MD DNR's water quality monitoring station RET2.1 is located approximately 5.8 miles upstream of Outfall 001.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

Yes.

**Table A. 303(d) Impairment and TMDL information for the receiving stream segment**

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
<b>Impairment Information in the VA Draft 2012 Integrated Report*</b>						
Potomac River/Fairview Beach	Recreation	Enterococcus	No	---	---	2018
	Fish Consumption	PCBs	Tidal Potomac PCB 10/31/2007	None	---	N/A



<b>Impairment Information in the Final Draft MD 2012 Integrated Report (final report not yet approved by EPA)</b>						
Potomac River	Seasonal Shallow-water SAV substrate	TSS	Chesapeake Bay 12/31/2010	18273.36 (lbs/year) TSS	0.20 MGD	N/A
	Open-Water Fish & Shellfish	Nitrogen (Total)		1827 (lbs/year) TN		
	Seasonal Migratory Fish Spawning and Nursery	Phosphorus (Total)		183 (lbs/year) TP		
	Aquatic Life & Wildlife	Unknown	No	---	---	Low priority, not within 2 years

*\*The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

No.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

The tidal Potomac River is listed with a PCB impairment. Due to this PCB impairment, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. DEQ staff recommends that this facility perform low-level PCB monitoring during the upcoming permit cycle. It is recommended that this facility collect 1 wet sample and 1 dry sample using EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. During the interim period while EPA is undergoing the rulemaking process to promulgate EPA Method 1668C within 40 CFR, rather than requiring the most recent version of 1668 be utilized, Method 1668 revisions A, B, C or other revisions issued by EPA prior to final promulgation are acceptable for use.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within a 5 mile radius.

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Fairview Beach WWTP-Acute WLAs Permit No.: VA0092134  
 Receiving Stream: Potomac River Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO <sub>3</sub> ) =	50 mg/L		1Q10 (Annual) =	1 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO <sub>3</sub> ) =	60 mg/L	
90% Temperature (Annual) =	28.2 deg C		7Q10 (Annual) =	1 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	26 deg C	
90% Temperature (Wet season) =	deg C		30Q10 (Annual) =	1 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =	7.9 SU		1Q10 (Wet season) =	1 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	8.1 SU	
10% Maximum pH =	SU		30Q10 (Wet season)	1 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		30Q5 =	1 MGD					Discharge Flow =	1 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	1 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background			Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
	Acute	Chronic	HH (PWS)	HH	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Chronic	HH (PWS)
Acenaphthene	0	--	na	9.9E+02	na	2.0E+03	--	--	na	--	--	--	--	--	na	--	--	na
Acrolein	0	--	na	9.3E+00	na	1.9E+01	--	--	na	--	--	--	--	--	na	--	--	na
Acrylonitrile <sup>c</sup>	0	--	na	2.5E+00	na	5.0E+00	--	--	na	--	--	--	--	--	na	--	--	na
Aldrin <sup>c</sup>	0	3.0E+00	na	5.0E-04	na	1.0E-03	6.0E+00	--	na	--	--	--	--	--	na	6.0E+00	--	na
Ammonia-N (mg/l) (Yearly)	0	8.59E+00	1.10E+00	--	na	--	1.72E+01	2.20E+00	na	--	--	--	--	--	na	1.72E+01	2.20E+00	na
Ammonia-N (mg/l) (High Flow)	0	8.59E+00	2.47E+00	--	na	--	1.72E+01	4.95E+00	na	--	--	--	--	--	na	1.72E+01	4.95E+00	na
Anthrane	0	--	na	4.0E+04	na	8.0E+04	--	--	na	--	--	--	--	--	na	--	--	na
Antimony	0	--	na	6.4E+02	na	1.3E+03	--	--	na	--	--	--	--	--	na	--	--	na
Arsenic	0	3.4E+02	1.5E+02	--	na	--	6.8E+02	3.0E+02	na	--	--	--	--	--	na	6.8E+02	3.0E+02	na
Barium	0	--	na	--	na	--	--	--	na	--	--	--	--	--	na	--	--	na
Benzene <sup>c</sup>	0	--	na	5.1E+02	na	1.0E+03	--	--	na	--	--	--	--	--	na	--	--	na
Benzidine <sup>c</sup>	0	--	na	2.0E-03	na	4.0E-03	--	--	na	--	--	--	--	--	na	--	--	na
Benzo (a) anthracene <sup>c</sup>	0	--	na	1.8E-01	na	3.8E-01	--	--	na	--	--	--	--	--	na	--	--	na
Benzo (b) fluoranthene <sup>c</sup>	0	--	na	1.8E-01	na	3.8E-01	--	--	na	--	--	--	--	--	na	--	--	na
Benzo (k) fluoranthene <sup>c</sup>	0	--	na	1.8E-01	na	3.8E-01	--	--	na	--	--	--	--	--	na	--	--	na
Benzo (a) pyrene <sup>c</sup>	0	--	na	1.8E-01	na	3.8E-01	--	--	na	--	--	--	--	--	na	--	--	na
Bis(2-Chloroethyl) Ether <sup>c</sup>	0	--	na	5.3E+00	na	1.1E+01	--	--	na	--	--	--	--	--	na	--	--	na
Bis(2-Chloroisopropyl) Ether <sup>c</sup>	0	--	na	6.5E+04	na	1.3E+05	--	--	na	--	--	--	--	--	na	--	--	na
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	--	na	2.2E+01	na	4.4E+01	--	--	na	--	--	--	--	--	na	--	--	na
Bromofom <sup>c</sup>	0	--	na	1.4E+03	na	2.8E+03	--	--	na	--	--	--	--	--	na	--	--	na
Butylbenzylphthalate	0	--	na	1.8E+03	na	3.8E+03	--	--	na	--	--	--	--	--	na	--	--	na
Cadmium	0	2.0E+00	7.1E-01	--	na	--	4.0E+00	1.4E+00	na	--	--	--	--	--	na	4.0E+00	1.4E+00	na
Carbon Tetrachloride <sup>c</sup>	0	--	na	1.6E+01	na	3.2E+01	--	--	na	--	--	--	--	--	na	--	--	na
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	8.1E-03	na	1.6E-02	4.8E+00	8.6E-03	na	--	--	--	--	--	na	4.8E+00	8.6E-03	na
Chloride	0	8.6E+05	2.3E+05	--	na	--	1.7E+06	4.6E+05	na	--	--	--	--	--	na	1.7E+06	4.6E+05	na
TRC	0	1.9E+01	1.1E+01	--	na	--	3.8E+01	2.2E+01	na	--	--	--	--	--	na	3.8E+01	2.2E+01	na
Chlorobenzene	0	--	na	1.6E+03	na	3.2E+03	--	--	na	--	--	--	--	--	na	--	--	na



Parameter (ug/l unless noted) <sup>c</sup>	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Chlorobromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	2.6E+02	--	--	--	--	--	--	na
Chloroform	0	--	--	na	1.1E+04	--	--	na	2.2E+04	--	--	--	--	--	--	na
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	3.2E+03	--	--	--	--	--	--	na
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	1.7E-01	8.2E-02	na	--	--	--	--	--	1.7E-01	8.2E-02	na
Chromium III	0	3.5E+02	4.5E+01	na	--	7.0E+02	9.1E+01	na	--	--	--	--	--	7.0E+02	9.1E+01	na
Chromium VI	0	1.6E+01	1.1E+01	na	--	3.2E+01	2.2E+01	na	--	--	--	--	--	3.2E+01	2.2E+01	na
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	na
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	3.6E-02	--	--	--	--	--	--	na
Copper	0	7.7E+00	5.4E+00	na	--	1.5E+01	1.1E+01	na	--	--	--	--	--	1.5E+01	1.1E+01	na
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	4.4E+01	1.0E+01	na	3.2E+04	--	--	--	--	4.4E+01	1.0E+01	na
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	6.2E-03	--	--	--	--	--	--	na
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	4.4E-03	--	--	--	--	--	--	na
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	2.2E+00	2.0E-03	na	4.4E-03	--	--	--	--	2.2E+00	2.0E-03	na
Demeton	0	--	1.0E-01	na	--	--	2.0E-01	na	--	--	--	--	--	--	2.0E-01	na
Diazinon	0	1.7E-01	1.7E-01	na	--	3.4E-01	3.4E-01	na	--	--	--	--	--	3.4E-01	3.4E-01	na
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	3.6E-01	--	--	--	--	--	--	na
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	2.6E+03	--	--	--	--	--	--	na
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.9E+03	--	--	--	--	--	--	na
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	3.8E+02	--	--	--	--	--	--	na
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	5.6E-01	--	--	--	--	--	--	na
Dichlorobromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	3.4E+02	--	--	--	--	--	--	na
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	7.4E+02	--	--	--	--	--	--	na
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	1.4E+04	--	--	--	--	--	--	na
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	na
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	5.8E+02	--	--	--	--	--	--	na
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na
1,3-Dichloropropene <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	4.2E+02	--	--	--	--	--	--	na
Dieldrin <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	4.8E-01	1.1E-01	na	1.1E-03	--	--	--	--	4.8E-01	1.1E-01	na
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	8.8E+04	--	--	--	--	--	--	na
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.7E+03	--	--	--	--	--	--	na
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	2.2E+06	--	--	--	--	--	--	na
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	9.0E+03	--	--	--	--	--	--	na
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	1.1E+04	--	--	--	--	--	--	na
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	5.6E+02	--	--	--	--	--	--	na
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	3.4E+01	--	--	na	6.8E+01	--	--	--	--	--	--	na
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	1.0E-07	--	--	--	--	--	--	na
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	2.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	na
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.4E-01	1.1E-01	na	1.8E+02	--	--	--	--	4.4E-01	1.1E-01	na
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.4E-01	1.1E-01	na	1.8E+02	--	--	--	--	4.4E-01	1.1E-01	na
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	4.4E-01	1.1E-01	--	--	--	--	--	--	4.4E-01	1.1E-01	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.8E+02	--	--	--	--	--	--	na
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	1.7E-01	7.2E-02	na	1.2E-01	--	--	--	--	1.7E-01	7.2E-02	na
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	6.0E-01	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	4.2E+03	--	--	--	--	--	--	--	--	--	--	na	4.2E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	2.0E-02	na	--	--	--	--	--	--	--	--	--	--	2.0E-02	na	--
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	1.0E+00	7.8E-03	na	1.6E-03	--	--	--	--	--	--	--	--	1.0E+00	7.8E-03	na	1.6E-03
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	1.0E+00	7.6E-03	na	7.8E-04	--	--	--	--	--	--	--	--	1.0E+00	7.8E-03	na	7.8E-04
Hexachlorobenzene <sup>c</sup>	0	--	--	na	2.9E-03	--	--	na	5.8E-03	--	--	--	--	--	--	--	--	--	--	na	5.8E-03
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	3.6E+02	--	--	--	--	--	--	--	--	--	--	na	3.6E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	9.8E-02	--	--	--	--	--	--	--	--	--	--	na	9.8E-02
Alpha-BHC <sup>c</sup>	0	--	--	na	1.7E-01	--	--	na	3.4E-01	--	--	--	--	--	--	--	--	--	--	na	3.4E-01
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	1.9E+00	--	na	3.6E+00	--	--	--	--	--	--	--	--	1.9E+00	--	na	3.6E+00
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	na	1.1E+03	--	--	na	2.2E+03	--	--	--	--	--	--	--	--	--	--	na	2.2E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	6.6E+01	--	--	--	--	--	--	--	--	--	--	na	6.6E+01
Hexachloroethane <sup>c</sup>	0	--	2.0E+00	na	--	--	4.0E+00	na	--	--	--	--	--	--	--	--	--	--	4.0E+00	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	3.6E-01	--	--	--	--	--	--	--	--	--	--	na	3.6E-01
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Iron	0	--	--	na	9.6E+03	--	--	na	1.9E+04	--	--	--	--	--	--	--	--	--	--	na	1.9E+04
Isophorone <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Kepon	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	5.6E+01	6.3E+00	na	--	1.1E+02	1.3E+01	na	--	--	--	--	--	--	--	--	--	1.1E+02	1.3E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	2.0E-01	na	--	--	--	--	--	--	--	--	--	--	2.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	2.8E+00	1.5E+00	--	--	--	--	--	--	--	--	--	--	2.8E+00	1.5E+00	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	3.0E+03	--	--	--	--	--	--	--	--	--	--	na	3.0E+03
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Methoxychlor	0	--	3.0E-02	na	--	--	6.0E-02	na	--	--	--	--	--	--	--	--	--	--	6.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.1E+02	1.2E+01	na	4.6E+03	2.2E+02	2.4E+01	na	9.2E+03	--	--	--	--	--	--	--	--	2.2E+02	2.4E+01	na	9.2E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	1.2E+02	--	--	--	--	--	--	--	--	--	--	na	1.2E+02
N-Nitrosodi-n-propylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	1.0E+01	--	--	--	--	--	--	--	--	--	--	na	1.0E+01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	5.6E+01	1.3E+01	na	--	--	--	--	--	--	--	--	--	5.6E+01	1.3E+01	na	--
Parathion	0	6.8E-02	1.3E-02	na	--	1.3E-01	2.6E-02	na	--	--	--	--	--	--	--	--	--	1.3E-01	2.6E-02	na	--
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	2.8E-02	na	1.3E-03	--	--	--	--	--	--	--	--	--	2.8E-02	na	1.3E-03
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	1.5E-02	1.2E-02	na	6.0E+01	--	--	--	--	--	--	--	--	1.5E-02	1.2E-02	na	6.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	1.7E+06	--	--	--	--	--	--	--	--	--	--	na	1.7E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	8.0E+03	--	--	--	--	--	--	--	--	--	--	na	8.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	4.0E+01	1.0E+01	na	8.4E+03	--	--	--	--	4.0E+01	1.0E+01	na
Silver	0	1.2E+00	--	na	--	2.5E+00	--	na	--	--	--	--	--	2.5E+00	--	na
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	8.0E+01	--	--	--	--	--	--	na
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	6.6E+01	--	--	--	--	--	--	na
Thallium	0	--	--	na	4.7E-01	--	--	na	9.4E-01	--	--	--	--	--	--	na
Toluene	0	--	--	na	6.0E+03	--	--	na	1.2E+04	--	--	--	--	--	--	na
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	1.8E+00	4.0E-04	na	5.6E-03	--	--	--	--	1.5E+00	4.0E-04	na
Tributyltin	0	4.6E-01	7.2E-02	na	--	9.2E-01	1.4E-01	na	--	--	--	--	--	9.2E-01	1.4E-01	na
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	1.4E+02	--	--	--	--	--	--	na
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	3.2E+02	--	--	--	--	--	--	na
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	6.0E+02	--	--	--	--	--	--	na
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	4.8E+01	--	--	--	--	--	--	na
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Vinyl Chloride <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	4.8E+01	--	--	--	--	--	--	na
Zinc	0	7.1E+01	7.1E+01	na	2.6E+04	1.4E+02	1.4E+02	na	5.2E+04	--	--	--	--	1.4E+02	1.4E+02	na

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.  
Antidegradation WLAs = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	1.3E+03
Arsenic	1.8E+02
Barium	na
Cadmium	8.5E-01
Chromium III	5.5E+01
Chromium VI	1.3E+01
Copper	6.1E+00
Iron	na
Lead	7.6E+00
Manganese	na
Mercury	9.2E-01
Nickel	1.5E+01
Selenium	6.0E+00
Silver	9.9E-01
Zinc	5.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Permit No.: VA0092134

Fairview Beach WWTP -Chronic WLAs

Facility Name:

Potomac River

Receiving Stream:

Version: OWP Guidance Memo 00-2011 (8/24/00)

## Stream Information

Mean Hardness (as CaCO<sub>3</sub>) = 50 mg/L  
 90% Temperature (Annual) = 28.2 deg C  
 90% Temperature (Wet season) = deg C  
 90% Maximum pH = 7.9 SU  
 10% Maximum pH = SU  
 Tier Designation (1 or 2) = 1  
 Public Water Supply (PWS) Y/N? = n  
 Trout Present Y/N? = n  
 Early Life Stages Present Y/N? = y

## Mixing Information

Annual - 1Q10 Mix = 100 %  
 - 7Q10 Mix = 100 %  
 - 30Q10 Mix = 100 %  
 Wet Season - 1Q10 Mix = 100 %  
 - 30Q10 Mix = 100 %

## Effluent Information

Mean Hardness (as CaCO<sub>3</sub>) = 60 mg/L  
 90% Temp (Annual) = 26 deg C  
 90% Temp (Wet season) = deg C  
 90% Maximum pH = 8.1 SU  
 10% Maximum pH = SU  
 Discharge Flow = 1 MGD

## Stream Flows

1Q10 (Annual) = 49 MGD  
 7Q10 (Annual) = 49 MGD  
 30Q10 (Annual) = 49 MGD  
 1Q10 (Wet season) = 49 MGD  
 30Q10 (Wet season) = 49 MGD  
 30Q5 = 49 MGD  
 Harmonic Mean = 49 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	5.0E+04	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	4.7E+02	--	--	--	--	--	--	na
Acrylonitrile <sup>c</sup>	0	--	--	na	2.5E+00	--	--	na	1.3E+02	--	--	--	--	--	--	na
Aldrin <sup>c</sup>	0	3.0E+00	--	na	5.0E+04	1.5E+02	--	na	2.5E+02	--	--	--	--	1.5E+02	--	na
Ammonia-N (mg/l)	0	1.01E+01	1.16E+00	na	--	5.04E+02	5.78E+01	na	--	--	--	--	--	5.04E+02	5.78E+01	na
Ammonia-N (mg/l)	0	1.01E+01	2.79E+00	na	--	5.04E+02	1.39E+02	na	--	--	--	--	--	5.04E+02	1.39E+02	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	2.0E+06	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	3.2E+04	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	1.7E+04	7.5E+03	na	--	--	--	--	--	1.7E+04	7.5E+03	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene <sup>c</sup>	0	--	--	na	5.1E+02	--	--	na	2.6E+04	--	--	--	--	--	--	na
Benzidine <sup>c</sup>	0	--	--	na	2.0E+03	--	--	na	1.0E+01	--	--	--	--	--	--	na
Benzo (a) anthracene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	9.0E+00	--	--	--	--	--	--	na
Benzo (b) fluoranthene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	9.0E+00	--	--	--	--	--	--	na
Benzo (k) fluoranthene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	9.0E+00	--	--	--	--	--	--	na
Benzo (a) pyrene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	9.0E+00	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether <sup>c</sup>	0	--	--	na	5.3E+00	--	--	na	2.7E+02	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether <sup>c</sup>	0	--	--	na	6.5E+04	--	--	na	3.3E+06	--	--	--	--	--	--	na
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	--	--	na	2.2E+01	--	--	na	1.1E+03	--	--	--	--	--	--	na
Bromoform <sup>c</sup>	0	--	--	na	1.4E+03	--	--	na	7.0E+04	--	--	--	--	--	--	na
Butylbenzylphthalate	0	1.8E+00	6.6E-01	na	--	9.0E+01	3.3E+01	na	--	--	--	--	--	9.0E+01	3.3E+01	na
Cadmium	0	--	--	na	1.6E+01	--	--	na	8.0E+02	--	--	--	--	--	--	na
Carbon Tetrachloride <sup>c</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	1.2E+02	2.2E-01	na	4.1E-01	--	--	--	--	1.2E+02	2.2E-01	na
Chlordane <sup>c</sup>	0	8.6E+05	2.3E+05	na	--	4.3E+07	1.2E+07	na	--	--	--	--	--	4.3E+07	1.2E+07	na
Chloride	0	1.9E+01	1.1E+01	na	--	9.6E+02	5.6E+02	na	--	--	--	--	--	9.5E+02	5.5E+02	na
TRC	0	--	--	na	1.6E+03	--	--	na	8.0E+04	--	--	--	--	--	--	na
Chlorobenzene	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	6.5E+03	--	--	--	--	--	--	--	--	--	--	na	6.5E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	5.5E+05	--	--	--	--	--	--	--	--	--	--	na	5.5E+05
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	8.0E+04	--	--	--	--	--	--	--	--	--	--	na	8.0E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	7.5E+03	--	--	--	--	--	--	--	--	--	--	na	7.5E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	4.2E+00	2.1E+00	na	--	--	--	--	--	4.2E+00	2.1E+00	na	--	4.2E+00	2.1E+00	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	1.6E+04	2.1E+03	na	--	--	--	--	--	1.6E+04	2.1E+03	na	--	1.6E+04	2.1E+03	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	8.0E+02	5.5E+02	na	--	--	--	--	--	8.0E+02	5.5E+02	na	--	8.0E+02	5.5E+02	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	na	--	--	--	na	--
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	9.0E-01	--	--	--	--	--	--	na	--	--	--	na	9.0E-01
Copper	0	7.0E+00	5.0E+00	na	--	3.5E+02	2.5E+02	na	--	--	--	--	--	3.5E+02	2.5E+02	na	--	3.5E+02	2.5E+02	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	1.1E+03	2.6E+02	na	8.0E+05	--	--	--	--	1.1E+03	2.6E+02	na	--	1.1E+03	2.6E+02	na	8.0E+05
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	1.6E-01	--	--	--	--	--	--	na	--	--	--	na	1.6E-01
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	1.1E-01	--	--	--	--	--	--	na	--	--	--	na	1.1E-01
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	5.5E+01	5.0E-02	na	1.1E-01	--	--	--	--	5.5E+01	5.0E-02	na	--	5.5E+01	5.0E-02	na	1.1E-01
Demeton	0	--	1.0E-01	na	--	--	5.0E+00	na	--	--	--	--	--	--	5.0E+00	na	--	--	5.0E+00	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	8.5E+00	8.5E+00	na	--	--	--	--	--	8.5E+00	8.5E+00	na	--	8.5E+00	8.5E+00	na	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	9.0E+00	--	--	--	--	--	--	na	--	--	--	na	9.0E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	6.5E+04	--	--	--	--	--	--	na	--	--	--	na	6.5E+04
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	4.8E+04	--	--	--	--	--	--	na	--	--	--	na	4.8E+04
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	9.5E+03	--	--	--	--	--	--	na	--	--	--	na	9.5E+03
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	1.4E+01	--	--	--	--	--	--	na	--	--	--	na	1.4E+01
Dichlorobromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	8.5E+03	--	--	--	--	--	--	na	--	--	--	na	8.5E+03
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	1.9E+04	--	--	--	--	--	--	na	--	--	--	na	1.9E+04
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	3.6E+05	--	--	--	--	--	--	na	--	--	--	na	3.6E+05
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	5.0E+05	--	--	--	--	--	--	na	--	--	--	na	5.0E+05
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	1.5E+04	--	--	--	--	--	--	na	--	--	--	na	1.5E+04
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	7.5E+03	--	--	--	--	--	--	na	--	--	--	na	7.5E+03
1,3-Dichloropropene <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	1.1E+04	--	--	--	--	--	--	na	--	--	--	na	1.1E+04
Dieldrin <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	1.2E+01	2.8E+00	na	2.7E-02	--	--	--	--	1.2E+01	2.8E+00	na	--	1.2E+01	2.8E+00	na	2.7E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	2.2E+06	--	--	--	--	--	--	na	--	--	--	na	2.2E+06
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	4.3E+04	--	--	--	--	--	--	na	--	--	--	na	4.3E+04
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	5.5E+07	--	--	--	--	--	--	na	--	--	--	na	5.5E+07
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	2.3E+05	--	--	--	--	--	--	na	--	--	--	na	2.3E+05
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	2.7E+05	--	--	--	--	--	--	na	--	--	--	na	2.7E+05
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	1.4E+04	--	--	--	--	--	--	na	--	--	--	na	1.4E+04
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	3.4E+01	--	--	na	1.7E+03	--	--	--	--	--	--	na	--	--	--	na	1.7E+03
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	2.6E-06	--	--	--	--	--	--	na	--	--	--	na	2.6E-06
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	2.0E+00	--	--	na	1.0E+02	--	--	--	--	--	--	na	--	--	--	na	1.0E+02
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	1.1E+01	2.8E+00	na	4.5E+03	--	--	--	--	1.1E+01	2.8E+00	na	--	1.1E+01	2.8E+00	na	4.5E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	1.1E+01	2.8E+00	na	4.5E+03	--	--	--	--	1.1E+01	2.8E+00	na	--	1.1E+01	2.8E+00	na	4.5E+03
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	1.1E+01	2.8E+00	--	--	--	--	--	--	1.1E+01	2.8E+00	--	--	1.1E+01	2.8E+00	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	4.5E+03	--	--	--	--	--	--	na	--	--	--	na	4.5E+03
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	4.3E+00	1.8E+00	na	3.0E+00	--	--	--	--	4.3E+00	1.8E+00	na	--	4.3E+00	1.8E+00	na	3.0E+00
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	1.5E+01	--	--	--	--	--	--	na	--	--	--	na	1.5E+01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	7.0E+03	--	--	--	--	--	--	--	--	--	--	na	7.0E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	2.7E+05	--	--	--	--	--	--	--	--	--	--	na	2.7E+05
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	--	5.0E-01	na	--	--	--	--	--	--	--	--	--	5.0E-01	na	--
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	2.6E+01	1.9E-01	na	4.0E-02	--	--	--	--	--	--	--	--	2.6E+01	1.9E-01	na	4.0E-02
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	2.6E+01	1.9E-01	na	2.0E-02	--	--	--	--	--	--	--	--	2.6E+01	1.9E-01	na	2.0E-02
Hexachlorobenzene <sup>c</sup>	0	--	--	na	2.9E-03	--	--	na	1.5E-01	--	--	--	--	--	--	--	--	--	--	na	1.5E-01
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	9.0E+03	--	--	--	--	--	--	--	--	--	--	na	9.0E+03
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Alpha-BHC <sup>c</sup>	0	--	--	na	1.7E-01	--	--	na	8.5E+00	--	--	--	--	--	--	--	--	--	--	na	8.5E+00
Hexachlorocyclohexane Beta-BHC <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hexachlorocyclohexane Gamma-BHC <sup>c</sup> (Lindane)	0	9.5E-01	na	na	1.8E+00	4.8E+01	--	na	9.0E+01	--	--	--	--	--	--	--	--	4.8E+01	--	na	9.0E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	5.5E+04	--	--	--	--	--	--	--	--	--	--	na	5.5E+04
Hexachloroethane <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	--	1.0E+02	na	--	--	--	--	--	--	--	--	--	1.0E+02	na	--
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	9.0E+00	--	--	--	--	--	--	--	--	--	--	na	9.0E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone <sup>c</sup>	0	--	--	na	9.6E+03	--	--	na	4.8E+05	--	--	--	--	--	--	--	--	--	--	na	4.8E+05
Kepone	0	--	0.0E+00	na	--	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	2.5E+03	2.8E+02	na	--	--	--	--	--	--	--	--	--	2.5E+03	2.8E+02	na	--
Malathion	0	--	1.0E-01	na	--	--	--	5.0E+00	na	--	--	--	--	--	--	--	--	--	5.0E+00	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	7.0E+01	3.9E+01	--	--	--	--	--	--	--	--	--	--	7.0E+01	3.9E+01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	7.5E+04	--	--	--	--	--	--	--	--	--	--	na	7.5E+04
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	3.0E+05	--	--	--	--	--	--	--	--	--	--	na	3.0E+05
Methoxychlor	0	--	3.0E-02	na	--	--	--	1.5E+00	na	--	--	--	--	--	--	--	--	--	1.5E+00	na	--
Mirex	0	--	0.0E+00	na	--	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	5.1E+03	5.7E+02	na	2.3E+05	--	--	--	--	--	--	--	--	5.1E+03	5.7E+02	na	2.3E+05
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	3.5E+04	--	--	--	--	--	--	--	--	--	--	na	3.5E+04
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	3.0E+03	--	--	--	--	--	--	--	--	--	--	na	3.0E+03
N-Nitrosodi-n-propylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	2.6E+02	--	--	--	--	--	--	--	--	--	--	na	2.6E+02
Nonylphenol	0	2.8E+01	6.6E+00	--	--	1.4E+03	3.3E+02	na	--	--	--	--	--	--	--	--	--	1.4E+03	3.3E+02	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	3.3E+00	6.5E-01	na	--	--	--	--	--	--	--	--	--	3.3E+00	6.5E-01	na	--
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	7.0E-01	na	3.2E-02	--	--	--	--	--	--	--	--	--	7.0E-01	na	3.2E-02
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	3.8E-01	2.9E-01	na	1.5E+03	--	--	--	--	--	--	--	--	3.8E-01	2.9E-01	na	1.5E+03
Phenol	0	--	--	na	8.6E+05	--	--	na	4.3E+07	--	--	--	--	--	--	--	--	--	--	na	4.3E+07
Pyrene	0	--	--	na	4.0E+03	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Radionuclides Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	1.0E+03	2.5E+02	na	2.1E+05	--	--	--	--	--	--	--	--	1.0E+03	2.5E+02	na	2.1E+05
Silver	0	1.1E+00	--	na	--	5.3E+01	--	na	--	--	--	--	--	--	--	--	--	5.3E+01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	2.0E+03	--	--	--	--	--	--	--	--	--	--	na	2.0E+03
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Thallium	0	--	--	na	4.7E-01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Toluene	0	--	--	na	6.0E+03	--	--	na	3.0E+05	--	--	--	--	--	--	--	--	--	--	na	3.0E+05
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	3.7E+01	1.0E-02	na	1.4E-01	--	--	--	--	--	--	--	--	3.7E+01	1.0E-02	na	1.4E-01
Tributyltin	0	4.6E-01	7.2E-02	na	--	2.3E+01	3.6E+00	na	--	--	--	--	--	--	--	--	--	2.3E+01	3.6E+00	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	3.5E+03	--	--	--	--	--	--	--	--	--	--	na	3.5E+03
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	8.0E+03	--	--	--	--	--	--	--	--	--	--	na	8.0E+03
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	1.5E+04	--	--	--	--	--	--	--	--	--	--	na	1.5E+04
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	3.3E+03	3.3E+03	na	1.3E+06	--	--	--	--	--	--	--	--	3.3E+03	3.3E+03	na	1.3E+06

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 20 maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	3.2E+04
Arsenic	4.5E+03
Barium	na
Cadmium	2.0E+01
Chromium III	1.3E+03
Chromium VI	3.2E+02
Copper	1.4E+02
Iron	na
Lead	1.7E+02
Manganese	na
Mercury	2.3E+01
Nickel	3.4E+02
Selenium	1.5E+02
Silver	2.1E+01
Zinc	1.3E+03

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# SALTWATER AND TRANSITION ZONES WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Fairview Beach WWTP  
Receiving Stream: Potomac River

Permit No.: VA0092134

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Mixing Information			Effluent Information		
Mean Hardness (as CaCO <sub>3</sub> ) =	50	mg/l	Design Flow (MGD)	0.2		Mean Hardness (as CaCO <sub>3</sub> ) =	60	mg/L
90th % Temperature (Annual) =	28.2	(° C)	Acute WLA multiplier	2		90 % Temperature (Annual) =	26	(° C)
90th % Temperature (Winter) =		(° C)	Chronic WLA multiplier	50		90 % Temperature (Winter) =		(° C)
90th % Maximum pH =	7.9		Human health WLA multiplier			90 % Maximum pH =	8.1	SU
10th % Maximum pH =						10 % Maximum pH =		SU
Tier Designation (1 or 2) =	1					Discharge Flow =	0.2	MGD
Early Life Stages Present Y/N =	Y							
Tidal Zone =	2	(1 = saltwater, 2 = transition zone)						
Mean Salinity =	3.5	(g/kg)						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Acenaphthene	0	--	--	9.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Acrolein		--	--	9.3E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Acrylonitrile <sup>C</sup>		--	--	2.5E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Aldrin <sup>C</sup>	0	1.3E+00	--	5.0E-04	2.6E+00	--	0.0E+00	--	--	--	2.6E+00	--	--	2.6E+00	--	0.0E+00
Ammonia-N (mg/l) - Annual	0	3.18E+00	5.39E-01	--	6.36E+00	2.70E+01	--	--	--	--	6.36E+00	2.70E+01	--	6.36E+00	2.70E+01	--
Ammonia-N (mg/l) - Winter	0	8.59E+00	2.79E+00	--	1.72E+01	1.39E+02	--	--	--	--	1.72E+01	1.39E+02	--	1.72E+01	1.39E+02	--
Anthracene	0	--	--	4.0E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Antimony	0	--	--	6.4E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Arsenic	0	6.9E+01	3.6E+01	--	1.4E+02	1.8E+03	--	--	--	--	1.4E+02	1.8E+03	--	1.4E+02	1.8E+03	--
Benzene <sup>C</sup>	0	--	--	5.1E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Benzidine <sup>C</sup>		--	--	2.0E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Benzo (a) anthracene <sup>C</sup>	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Benzo (a) pyrene <sup>C</sup>	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Bis2-Chloroethyl Ether <sup>C</sup>	0	--	--	5.3E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Bis2-Chloroisopropyl Ether	0	--	--	6.5E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Bis2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	2.2E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Bromoform <sup>C</sup>	0	--	--	1.4E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Cadmium	0	2.0E+00	6.6E-01	--	4.0E+00	3.3E+01	--	--	--	--	4.0E+00	3.3E+01	--	4.0E+00	3.3E+01	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	1.6E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Chlordane <sup>C</sup>	0	9.0E-02	4.0E-03	8.1E-03	1.8E-01	2.0E-01	0.0E+00	--	--	--	1.8E-01	2.0E-01	--	1.8E-01	2.0E-01	0.0E+00



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
TRC	0	1.9E+01	1.1E+01	--	3.8E+01	5.5E+02	--	--	--	--	--	--	--	3.8E+01	5.5E+02	--
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	2.6E+01	3.8E+02	--	--	--	--	--	--	--	2.6E+01	3.8E+02	--
Chlorobenzene	0	--	--	1.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Chlorodibromomethane <sup>c</sup>	0	--	--	1.3E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Chloroform	0	--	--	1.1E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2-Chlorophenol	0	--	--	1.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Chlorpyrifos	0	1.1E-02	5.6E-03	--	2.2E-02	2.8E-01	--	--	--	--	--	--	--	2.2E-02	2.8E-01	--
Chromium III	0	3.5E+02	4.2E+01	--	7.0E+02	2.1E+03	--	--	--	--	--	--	--	7.0E+02	2.1E+03	--
Chromium VI	0	1.6E+01	1.1E+01	--	3.2E+01	5.5E+02	--	--	--	--	--	--	--	3.2E+01	5.5E+02	--
Chrysene <sup>c</sup>	0	--	--	1.8E-02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Copper	0	7.7E+00	5.0E+00	--	1.5E+01	2.5E+02	--	--	--	--	--	--	--	1.5E+01	2.5E+02	--
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	2.0E+00	5.0E+01	0.0E+00	--	--	--	--	--	--	2.0E+00	5.0E+01	0.0E+00
DDD <sup>c</sup>	0	--	--	3.1E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
DDE <sup>c</sup>	0	--	--	2.2E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
DDT <sup>c</sup>	0	1.9E-01	1.0E-03	2.2E-03	2.6E-01	5.0E-02	0.0E+00	--	--	--	--	--	--	2.6E-01	5.0E-02	0.0E+00
Demeton	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	--	5.0E+00	--
Diazinon	0	1.7E-01	1.7E-01	--	3.4E-01	8.5E+00	--	--	--	--	--	--	--	3.4E-01	8.5E+00	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	2.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Dichlorobromomethane <sup>c</sup>	0	--	--	1.7E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,2-Dichloroethane <sup>c</sup>	0	--	--	3.7E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,2-Dichloropropane <sup>c</sup>	0	--	--	1.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,3-Dichloropropene <sup>c</sup>	0	--	--	2.1E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Dieldrin <sup>c</sup>	0	7.1E-01	1.9E-03	5.4E-04	1.4E+00	9.5E-02	0.0E+00	--	--	--	--	--	--	1.4E+00	9.5E-02	0.0E+00
Diethyl Phthalate	0	--	--	4.4E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	3.4E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Dioxin 2,3,7,8-	0	--	--	5.1E-08	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
tetrachlorodibenzo-p-dioxin	0	--	--	2.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0E+00
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	6.8E-02	4.4E-01	0.0E+00	--	--	--	--	--	--	6.8E-02	4.4E-01	0.0E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	6.8E-02	4.4E-01	0.0E+00	--	--	--	--	--	--	6.8E-02	4.4E-01	0.0E+00
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	6.8E-02	4.4E-01	--	--	--	--	--	--	--	6.8E-02	4.4E-01	--
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Endrin	0	3.7E-02	2.3E-03	6.0E-02	7.4E-02	1.2E-01	0.0E+00	--	--	--	--	--	--	7.4E-02	1.2E-01	0.0E+00
Endrin Aldehyde	0	--	--	3.0E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Ethylbenzene	0	--	--	2.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Fluoranthene	0	--	--	1.4E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Fluorene	0	--	--	5.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Guthion	0	--	1.0E-02	--	--	--	--	--	--	--	--	--	--	--	5.0E-01	--
Heptachlor <sup>c</sup>	0	5.3E-02	3.6E-03	7.9E-04	1.1E-01	1.8E-01	0.0E+00	--	--	--	--	--	--	1.1E-01	1.8E-01	0.0E+00
Heptachlor Epoxide <sup>c</sup>	0	5.3E-02	3.6E-03	3.9E-04	1.1E-01	1.8E-01	0.0E+00	--	--	--	--	--	--	1.1E-01	1.8E-01	0.0E+00
Hexachlorobenzene <sup>c</sup>	0	--	--	2.9E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorobutadiene <sup>c</sup>	0	--	--	1.8E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane Alpha-BHC <sup>c</sup>	0	--	--	4.9E-02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane Beta-BHC <sup>c</sup>	0	--	--	1.7E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane	0	1.6E-01	--	1.8E+00	3.2E-01	--	0.0E+00	--	--	--	--	--	--	3.2E-01	--	0.0E+00
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	1.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclopentadiene	0	--	--	3.3E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachloroethane <sup>c</sup>	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0E+00
Hydrogen Sulfide	0	--	2.0E+00	--	--	1.0E+02	--	--	--	--	--	--	--	--	1.0E+02	--
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Isophorone <sup>c</sup>	0	--	--	9.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Lead	0	5.6E+01	5.6E+00	--	1.1E+02	2.8E+02	--	--	--	--	--	--	--	1.1E+02	2.8E+02	--
Malathion	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	--	5.0E+00	--
Mercury	0	1.8E+00	9.4E-01	--	3.6E+00	4.7E+01	--	--	--	--	--	--	--	3.6E+00	4.7E+01	--
Methyl Bromide	0	--	--	1.5E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Methylene Chloride <sup>c</sup>	0	--	--	5.9E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Methoxychlor	0	--	3.0E-02	--	--	1.5E+00	--	--	--	--	--	--	--	--	1.5E+00	--
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Nickel	0	7.4E+01	8.2E+00	4.6E+03	1.5E+02	4.1E+02	0.0E+00	--	--	--	--	--	--	1.5E+02	4.1E+02	0.0E+00
Nitrobenzene	0	--	--	6.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	3.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	6.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodi-n-propylamine <sup>c</sup>	0	--	--	5.1E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Nonylphenol	0	7.0E+00	1.7E+00	--	1.4E+01	8.5E+01	--	--	--	--	--	--	--	1.4E+01	8.5E+01	--
Parathion	0	6.5E-02	1.3E-02	--	1.3E-01	6.5E-01	--	--	--	--	--	--	--	1.3E-01	6.5E-01	--
PCB Total <sup>c</sup>	0	--	1.4E-01	6.4E-04	--	7.0E+00	0.0E+00	--	--	--	--	--	--	--	7.0E+00	0.0E+00
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	3.0E+01	1.5E-02	2.9E-01	0.0E+00	--	--	--	--	--	--	1.5E-02	2.9E-01	0.0E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Phenol	0	--	--	8.6E+05	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Phosphorus (Elemental)	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	--	5.0E+00	--
Pyrene	0	--	--	4.0E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Selenium	0	2.0E+01	5.0E+00	4.2E+03	4.0E+01	2.5E+02	0.0E+00	--	--	--	--	--	--	4.0E+01	2.5E+02	0.0E+00
Silver	0	1.2E+00	--	--	2.5E+00	--	--	--	--	--	--	--	--	2.5E+00	--	--
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	4.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Tetrachloroethylene <sup>c</sup>	0	--	--	3.3E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Thallium	0	--	--	4.7E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Toluene <sup>c</sup>	0	--	--	6.0E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Toxaphene <sup>c</sup>	0	2.1E-01	2.0E-04	2.8E-03	4.2E-01	1.0E-02	0.0E+00	--	--	--	--	--	--	4.2E-01	1.0E-02	0.0E+00
Tributyltin	0	4.2E-01	7.4E-03	--	8.4E-01	3.7E-01	--	--	--	--	--	--	--	8.4E-01	3.7E-01	--
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	1.6E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Trichloroethylene <sup>c</sup>	0	--	--	3.0E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	2.4E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Vinyl Chloride <sup>c</sup>	0	--	--	2.4E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Zinc	0	7.1E+01	6.6E+01	2.6E+04	1.4E+02	3.3E+03	0.0E+00	--	--	--	--	--	--	1.4E+02	3.3E+03	0.0E+00

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Site Specific	
Metal	Target Value (SSTV)
Antimony	0.0E+00
Arsenic III	5.5E+01
Cadmium	1.6E+00
Chromium III	2.8E+02
Chromium VI	1.3E+01
Copper	6.1E+00
Lead	4.4E+01
Mercury	1.4E+00
Nickel	0.0E+00
Selenium	0.0E+00
Silver	9.9E-01
Zinc	0.0E+00

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Date	pH (S.U.)	Temp (°C)
1	7.53	21
2	7.77	21
3	8.06	21
4	8.01	21
5	7.51	21
6	8.28	21
7	7.61	20
8	7.41	22
9	7.62	22
10	8.11	22
11	7.88	22
12	8.28	23
13	8.22	23
14	7.68	23
15	8.41	24
16	8.25	23
17	8.28	23
18	8.17	23
19	8.43	24
20	8.05	24
21	7.96	24
22	8.31	23
23	8.33	24
24	8.24	25
25	8.1	25
26	8.4	25
27	8.41	25
28	8.06	24
29	8.01	24
30	8.41	24
1	8.22	24
2	8.34	24
3	8.43	25
4	7.8	25
5	8.05	24
6	8.42	25
7	8.12	24
8	8.44	25
9	8.13	24
10	8.06	23
11	8	24
12	8.11	25
13	8.02	25
14	7.96	25
15	8.24	25
16	7.82	27

Date	pH (S.U.)	Temp (°C)
17	8.22	26
18	8.14	26
19	8.35	25
20	8.17	25
21	8.47	25
22	8.45	25
23	8.09	25
24	8.41	25
25	8.39	26
26	7.94	26
27	8.35	25
28	8.45	25
29	7.84	25
30	7.82	24
31	8.49	24
1	7.51	25
2	7.97	25
3	8.48	26
4	8.4	25
5	8.12	25
6	7.84	25
7	7.91	24
8	8.23	24
9	7.89	26
10	7.91	25
11	7.71	26
12	8.18	26
13	8	25
14	7.83	27
15	8.19	26
16	7.78	26
17	7.9	25
18	7.78	26
19	7.65	27
20	7.99	26
21	8	27
22	7.9	26
23	7.72	27
24	7.75	26
25	8.01	25
26	7.61	26
27	7.71	25
28	7.72	25
29	8.16	26
30	7.86	26
31	7.77	25

Date	pH (S.U.)	Temp (°C)
1	8.1	23
2	7.91	23
3	7.91	23
4	8.35	24
5	7.97	24
6	7.9	25
7	8.01	24
8	7.83	24
9	7.75	24
10	8.23	23
11	7.78	23
12	7.85	22
13	8.03	23
14	7.87	24
15	8.02	23
16	7.63	24
17	7.75	23
18	7.97	23
19	7.56	23
20	7.8	22
21	7.59	21
22	8.03	22
23	7.58	23
24	7.82	23
25	7.35	23
26	7.59	23
27	7.94	23
28	7.95	22
29	8	22
30	7.44	21
1	7.37	20
2	7.3	20
3	7.21	20
4	7.72	20
5	7.75	21
6	7.89	20
7	7.67	21
8	7.34	19
9	7.26	20
10	7.31	21
11	6.71	19
12	7.38	19
13	7.78	18
14	7.86	18
15	7.48	17
16	7.85	17

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

	Oct-09				Dec-10				Jan-10		
	Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)
Oct-09	17	7.88	17	Dec-10	2	7.39	15	Jan-10	17	7.91	10
	18	7.67	16		3	7.85	17		18	7.44	10
	19	7.87	16		4	7.32	15		19	7.56	10
	20	7.6	15		5	7.4	15		20	7.33	11
	21	7.51	15		6	7.71	14		21	7.51	10
	22	7.43	16		7	7.93	14		22	7.65	10
	23	7.4	19		8	7.52	14		23	7.43	10
	24	7.71	19		9	7.49	14		24	7.16	11
	25	7.33	18		10	7.37	14		25	7.42	12
	26	7.46	17		11	7.48	12		26	7.21	12
	27	7.44	18		12	7.45	13		27	7.71	11
	28	7.34	18		13	7.38	12		28	7.2	12
	29	7.18	18		14	7.45	13		29	7.11	10
	30	7.36	18		15	7.51	13		30	7.29	9
	31	7.31	19		16	7.49	13		31	7.14	8
Nov-09	1	7.41	18	Jan-10	17	7.32	12	Feb-10	1	7.35	9
	2	7.29	18		18	7.36	12		2	7.47	9
	3	7.42	17		19	7.4	10		3	7.54	9
	4	n/d	n/d		20	7.49	11		4	7.57	9
	5	6.92	16		21	7.1	12		5	7.21	9
	6	7.34	16		22	7.33	12		6		
	7	7.3	15		23	7.67	11		7		
	8	6.98	16		24	7.58	11		8	7.79	8
	9	7.19	18		25	7.16	10		9	7.31	8
	10	7.29	16		26	7.38	12		10	7.09	8
	11	7.04	17		27	7.2	12		11	7.66	8
	12	7.26	16		28	7.06	12		12	7.27	8
	13	7.11	16		29	7.41	10		13	7.41	9
	14	7.21	16		30	7.16	10		14	7.76	9
	15	7.64	16		31	7.18	10		15	7.57	9
Dec-09	16	7.5	17	Jan-10	1	7.37	12	Mar-10	16	7.38	9
	17	7.29	16		2	7.15	10		17	7.19	9
	18	7.6	15		3	7.21	9		18	7.49	9
	19	7.52	16		4	7.2	9		19	7.21	10
	20	7.53	16		5	7.25	10		20	7.3	10
	21	7.59	16		6	7.12	10		21	8.04	10
	22	7.66	15		7	7.31	10		22	7.11	10
	23	7.58	16		8	7.9	9		23	7	11
	24	7.49	16		9	7.59	8		24	7.27	11
	25	7.43	16		10	7.38	7		25	7.19	11
	26	7.46	16		11	7.31	9		26	7.11	11
	27	7.83	16		12	7.33	8		27	7.29	11
	28	7.76	15		13	7.39	7		28	7.75	11
	29	8.04	16		14	7.31	8		1	7.77	12
	30	7.55	17		15	7.48	9		2	7.28	12
	1	7.75	15		16	7.74	9		3	7.25	11

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

	Date	pH (S.U.)	Temp (°C)
Mar-10	4	7.11	11
	5	7.21	11
	6	7.57	11
	7	7.5	11
	8	7.61	12
	9	7.55	11
	10	7.49	12
	11	7.67	13
	12	7.68	13
	13	7.07	13
	14	7.02	13
	15	7.38	13
	16	7.59	12
	17	7.68	13
	18	7.23	14
	19	7.07	13
	20	7.36	13
	21	7.6	14
	22	7.56	14
	23	7.89	15
	24	7.7	14
	25	7.79	14
	26	7.38	14
	27	7.45	14
	28	7.58	13
	29	7.21	14
	30	7.46	14
	31	7.41	14
Apr-10	1	7.53	14
	2	7.11	15
	3	8.3	16
	4	7.92	17
	5	7.57	16
	6	7.39	17
	7	7.53	17
	8	7.77	18
	9	8.2	18
	10	8.05	17
	11	7.59	15
	12	7.84	17
	13	7.7	17
	14	7.83	16
	15	7.87	17
	16	7.81	17
	17	7.88	17
	18	8.24	16

	Date	pH (S.U.)	Temp (°C)
Apr-10	19	7.58	16
	20	8.07	16
	21	7.76	17
	22	7.98	16
	23	8.02	16
	24	7.89	17
	25	8.09	18
	26	7.85	18
	27	7.81	18
	28	7.49	16
	29	7.22	17
May-10	30	7.15	16
	1	7.82	18
	2	7.97	21
	3	7.7	21
	4	7.92	22
	5	7.71	22.0
	6	7.86	30
	7	7.95	20
	8	7.63	20
	9	8.33	21
	10	8	20
	11	8.05	18
	12	7.95	18
	13	8.11	20
	14	8.28	20
	15	8.33	22
	16	8.21	21
	17	7.53	21
	18	8.03	20
	19	8.2	21
	20	8.38	23
	21	8.31	23
Jun-10	22	8.26	23
	23	8.4	23
	24	7.89	22
	25	7.84	21
	26	7.72	21
	27	8.32	25
	28	8.31	24
	29	7.43	24
	30	7.69	22
	31	7.82	23
	1	7.75	24
	2	7.39	22
	3	7.21	25

	Date	pH (S.U.)	Temp (°C)
Jun-10	4	7.36	26
	5	8.3	27
	6	7.87	26
	7	7.94	24
	8	7.98	22
	9	7.86	22
	10	8.07	26
	11	8.21	26
	12	7.72	27
	13	7.86	26
	14	7.66	26
	15	7.76	24
	16	7.82	24
	17	8.16	27
	18	7.71	27
	19	7.89	27
	20	7.93	27
Jul-10	21	7.94	26
	22	7.7	27
	23	7.86	26
	24	7.65	26
	25	7.56	27
	26	7.84	26
	27	8.07	28
	28	8.01	27
	29	8.43	28
	30	7.98	26
	1	8.1	23
	2	7.98	24
	3	7.91	23
	4	7.8	25
	5	8.22	26
	6	8.06	26
	7	7.91	25
	8	7.98	26
	9	7.9	26
	10	7.6	27
	11	8	18
	12	8.2	26
	13	7.51	26
	14	7.7	26
	15	6.49	25
	16	6.88	25
	17	7.21	25
	18	7.8	26
	19	7.92	27

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Jul-10	Date	pH (S.U.)	Temp (°C)	Sep-10	Date	pH (S.U.)	Temp (°C)	Oct-10	Date	pH (S.U.)	Temp (°C)
	20	7.79	26		4	7.67	24		20	7.88	18
	21	7.85	25		5	8.49	25		21	7.64	18
	22	7.7	26		6	8.34	24		22	7.78	17
	23	7.86	26		7	8.12	25		23	8.25	16
	24	7.96	27		8	7.79	25		24	7.75	16
	25	7.79	26		9	7.85	23		25	7.8	17
	26	7.64	26		10	7.78	23		26	7.52	19
	27	7.88	25		11	8.06	23		27	7.74	20
	28	7.8	27		12	7.95	24		28	7.16	21
	29	7.93	28		13	7.99	24		29	7.87	18
Aug-10	30	8.4	28	Oct-10	14	7.68	23	Nov-10	30	8.11	16
	31	8.21	27		15	7.77	23		31	7.69	17
	1	8.1	23		16	7.8	23		1	7.92	16
	2	7.98	24		17	7.62	23		2	7.77	15
	3	7.91	23		18	7.68	23		3	7.94	15
	4	7.8	25		19	7.96	22		4	7.83	16
	5	8.22	26		20	7.35	23		5	7.65	16
	6	7.06	26		21	7.7	22		6	7.92	14
	7	7.91	25		22	7.85	22		7	7.67	14
	8	7.98	26		23	7.72	23		8	7.8	14
	9	7.9	26		24	7.67	23		9	7.82	14
	10	7.6	27		25	7.71	24		10	7.94	14
	11	8	28		26	7.94	23		11	7.75	14
	12	8.2	26		27	7.69	23		12	7.97	14
	13	7.51	26		28	8.09	24		13	7.83	14
	14	7.7	26		29	7.61	23		14	7.47	14
	15	6.49	25		30	7.49	22		15	7.85	14
	16	6.88	25		1	7.43	22		16	7.69	15
	17	7.21	25		2	7.37	22		17	7.58	16
	18	7.8	26		3	7.65	21		18	7.39	15
	19	7.92	27		4	7.52	21		19	7.48	14
	20	7.79	26		5	7.38	19		20	7.89	14
	21	7.85	25		6	7.67	19		21	7.62	14
	22	7.7	26		7	7.8	18		22	7.63	15
	23	7.86	26		8	7.68	18		23	7.9	15
	24	7.96	27		9	7.79	17		24	7.62	13
	25	7.79	26		10	7.72	18		25	7.88	14
	26	7.64	26		11	7.85	19		26	7.57	16
	27	7.88	25		12	7.61	19		27	7.91	15
	28	7.8	27		13	7.91	19		28	7.95	14
	29	7.93	28		14	7.63	20		29	7.49	12
	30	8.4	28		15	8.21	18		30	7.72	13
	31	8.21	27		16	8.42	18	Dec-10	1	7.57	15
Sep-10	1	7.49	26		17	7.98	17		2	7.83	13
	2	7.88	25		18	7.63	18		3	7.91	14
	3	7.95	25		19	7.71	18		4	7.82	14

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Dec-10	Date	pH (S.U.)	Temp (°C)	Jan-11	Date	pH (S.U.)	Temp (°C)	Mar-11	Date	pH (S.U.)	Temp (°C)
	5	8.18	10		20	7.1	8		7	7.38	13
	6	7.71	10		21	7.06	10		8	7.47	13
	7	7.44	11		22	7.78	8		9	7.57	11
	8	7.68	11		23	7.68	6		10	7.37	12
	9	7.48	10		24	7.92	5		11	7.2	12
	10	7.75	9		25	7.42	7		12	7.85	11
	11	7.61	9		26	7.64	7		13	7.34	10
	12	7.53	11		27	7.47	8		14	7.29	12
	13	7.7	9		28	7.21	9		15	7.2	13
	14	7.77	8		29	7.14	8		16	7.18	15
	15	7.51	7		30	7.83	7		17	7.7	13
	16	7.87	6		31	7.21	8		18	7.61	13
	17	7.61	7		1	7.89	7		19	8.01	13
	18	7.5	8		2	7.61	8		20	7.44	113
	19	7.59	8		3	7.47	7		21	7.37	13
	20	7.65	8		4	7.15	8		22	7.46	14
	21	7.85	7		5	6.98	8		23	7.31	13
	22	7.67	7		6	7.21	9		24	7.64	14
	23	7.82	6		7	7.84	8		25	7.13	13
	24	7.72	6		8	7.94	8		26	7.94	12
	25	7.89	7		9	7.79	7		27	7.96	11
	26	7.52	7		10	7.41	8		28	7.59	11
	27	7.66	8		11	7.72	7		29	7.43	11
	28	7.79	7		12	7.38	9		30	7.29	12
	29	7.55	8		13	7.87	7		31	7.18	12
	30	7.95	7		14	7.89	9	Apr-11	1	7.56	12
	31	7.44	8		15	7.92	8		2	7.18	13
Jan-11	1	7.65	8		16	7.45	9		3	7.88	12
	2	7.75	10		17	7.38	10		4	7.81	13
	3	7.69	8		18	7.41	12		5	7.72	14
	4	7.82	9		19	7.12	12		6	7.12	13
	5	7.58	9		20	7.48	11		7	7.44	13
	6	7.78	7		21	7.79	12		8	7.56	13
	7	7.76	7		22	7.66	10		9	7.31	13
	8	7.93	7		23	7.47	10		10	7.88	14
	9	7.87	7		24	7.85	9		11	7.97	16
	10	7.43	8		25	7.77	10		12	7.56	16
	11	7.51	7		26	7.81	9		13	7.51	15
	12	7.76	7		27	7.83	10		14	7.39	14
	13	7.83	6		28	7.51	12		15	7.48	14
	14	7.71	5	Mar-11	1	7.67	10		16	7.63	13
	15	7.43	6		2	7.61	10		17	7.72	16
	16	7.77	6		3	7.71	10		18	7.65	15
	17	7.85	6		4	8	9		19	7.58	16
	18	7.37	7		5	7.53	10		20	7.65	17
	19	7.68	7		6	7.24	13		21	7.78	16



# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Apr-11	Date	pH (S.U.)	Temp (°C)	Jun-11	Date	pH (S.U.)	Temp (°C)	Jul-11	Date	pH (S.U.)	Temp (°C)
	22	7.25	15		7	7.55	25		23	7.84	28
	23	7.32	16		8	7.6	24		24	7.63	27
	24	7.58	17		9	7.37	25		25	7.42	27
	25	7.63	18		10	7.52	24		26	7.19	26
	26	7.91	20		11	7.58	24		27	7.66	26
	27	8.27	20		12	8.28	26		28	7.82	27
	28	7.71	22		13	7.71	25		29	7.47	28
	29	7.43	19		14	7.89	23		30	7.75	28
	30	7.56	19		15	7.66	24		31	7.28	27
May-11	1	7.68	17	Jun-11	16	7.41	23	Aug-11	1	7.68	27
	2	7.54	17		17	7.6	22		2	7.34	26
	3	7.21	18		18	7.33	23		3	7.56	25
	4	7.44	19		19	7.2	24		4	7.25	28
	5	8.15	19		20	7.22	23		5	7.31	27
	6	7.93	17		21	7.67	23		6	7.86	27
	7	7.97	19		22	7.34	23		7	7.59	27
	8	7.78	19		23	7.52	23		8	7.44	26
	9	7.24	18		24	7.59	23		9	7.68	26
	10	7.59	18		25	7.37	23		10	7.52	25
	11	7.91	19	Jul-11	26	7.64	24	Sep-11	11	7.84	26
	12	8.15	21		27	7.8	24		12	7.63	26
	13	7.84	19		28	8.19	26		13	7.7	26
	14	7.89	19		29	7.27	24		14	7.83	26
	15	7.9	20		30	7.63	23		15	7.79	25
	16	7.98	21		1	7.48	23		16	7.53	26
	17	8.22	21		2	8.12	25		17	7.69	24
	18	7.62	20		3	8.02	25		18	7.63	24
	19	7.68	20		4	7.25	26		19	7.57	24
	20	8.26	20		5	8.3	27		20	7.42	24
	21	7.59	20		6	7.85	25		21	7.83	26
	22	7.38	20		7	7.62	24		22	7.78	26
	23	7.06	21		8	7.48	25		23	7.75	26
	24	7.61	22		9	7.34	26		24	7.87	24
	25	7.65	22		10	7.73	25		25	7.8	25
	26	8.29	25		11	7.28	24		26	7.64	23
	27	7.75	23		12	7.58	26		27	7.72	24
	28	7.47	23		13	7.35	26		28	7.79	25
	29	7.6	23		14	7.87	25		29	7.97	25
	30	7.44	23		15	8.23	25		30	7.4	25
Jun-11	31	7.83	24		16	8.02	25		31	7.75	24
	1	7.82	24		17	7.64	23		1	7.54	22
	2	8.11	26		18	7.54	25		2	7.75	22
	3	7.84	23		19	7.8	26		3	7.58	23
	4	8.12	23		20	7.52	25		4	7.51	25
	5	7.44	24		21	7.71	26		5	7.59	26
	6	7.79	24		22	7.75	27		6	7.72	24

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Sep-11	Date	pH (S.U.)	Temp (°C)	Oct-11	Date	pH (S.U.)	Temp (°C)	Dec-11	Date	pH (S.U.)	Temp (°C)
	7	7.49	23		23	7.88	17		8	7.28	14
	8	7.36	24		24	7.5	18		9	7.22	14
	9	6.82	24		25	7.81	17		10	7.56	13
	10	7.22	24		26	7.3	17		11	7.27	112
	11	7.82	25		27	6.87	19		12	7.59	13
	12	7.86	24		28	7.21	17		13	7.68	12
	13	7.96	25		29	7.65	16		14	7.75	13
	14	7.79	24		30	7.47	16		15	7.46	12
	15	7.67	24		31	7.39	15		16	7.25	13
	16	7.42	22	Nov-11	1	7.72	15		17	7.69	12
	17	7.31	20		2	7.53	14		18	7.3	12
	18	7.53	19		3	7.56	15		19	7.57	13
	19	7.27	20		4	7.67	115		20	7.65	13
	20	7.44	21		5	7.75	14		21	7.66	14
	21	7.39	21		6	7.83	14		22	7.8	13
	22	7.78	22		7	8.02	14		23	7.73	13
	23	7.28	23		8	8	15		24	7.83	13
	24	7.55	23		9	7.55	14		25	7.57	12
	25	7.68	22		10	7.77	16		26	7.42	12
	26	7.76	23		11	7.64	16		27	7.48	12
	27	7.88	23		12	7.72	14		28	7.74	12
	28	7.47	22		13	8.1	14		29	7.56	11
	29	7.83	23		14	7.75	15		30	7.26	12
	30	7.25	23		15	8.18	16		31	7.28	13
Oct-11	1	7.98	21		16	7.85	16	Jan-12	1	7.8	12
	2	7.76	18		17	7.72	15		2	7.27	12
	3	7.81	19		18	7.94	13		3	7.44	11
	4	7.63	18		19	7.6	14		4	7.8	10
	5	7.68	19		20	8.13	14		5	7.72	10
	6	7.9	19		21	7.92	115		6	7.63	11
	7	7.89	19		22	7.78	16		7	7.68	12
	8	7.51	20		23	7.93	17		8	7.3	11
	9	7.67	20		24	7.68	15		9	7.82	10
	10	7.48	19		25	7.57	15		10	7.61	11
	11	7.73	20		26	7.5	14		11	7.54	10
	12	8.16	20		27	7.74	15		12	7.86	13
	13	8.13	21		28	7.67	16		13	7.61	11
	14	8.15	21		29	7.85	16		14	7.58	10
	15	7.98	20		30	7.97	14		15	7.67	9
	16	7.79	18	Dec-11	1	7.41	13		16	7.83	8
	17	7.54	19		2	7.72	12		17	7.68	10
	18	7.63	19		3	7.81	12		18	7.67	11
	19	7.8	19		4	7.65	13		19	7.76	11
	20	7.83	19		5	7.55	13		20	7.57	11
	21	7.75	18		6	7.62	15		21	7.73	10
	22	7.85	18		7	7.58	16		22	7.35	9

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

	Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)
Jan-12	23	7.29	10	Mar-12	9	7.58	12	Apr-12	24	7.57	16
	24	7.68	11		10	7.65	12		25	7.47	15
	25	7.57	11		11	7.33	11		26	7.68	17
	26	7.81	11		12	7.52	13		27	7.65	18
	27	7.73	12		13	7.47	14		28	7.56	17
	28	7.75	10		14	7.6	15		29	7.7	17
	29	7.43	10		15	7.67	14		30	7.47	18
	30	7.78	10		16	7.63	16	May-12	1	7.44	18
	31	7.72	10		17	7.55	16		2	7.37	20
Feb-12	1	7.52	14		18	7.6	16		3	7.7	19
	2	7.46	15		19	7.57	16		4	7.65	19
	3	7.6	14		20	7.51	18		5	7.79	20
	4	7.43	13		21	7.63	17		6	7.81	21
	5	7.69	12		22	7.76	17		7	7.84	20
	6	7.63	11		23	7.59	17		8	7.73	20
	7	7.59	11		24	7.56	17		9	7.37	21
	8	7.55	11		25	7.51	16		10	7.8	19
	9	7.81	9		26	7.75	16		11	8.05	20
	10	7.83	10	Apr-12	27	8.15	15		12	7.97	20
	11	7.87	10		28	7.53	15		13	7.78	20
	12	7.62	8		29	7.67	15		14	7.9	20
	13	7.44	9		30	7.59	15		15	7.83	22
	14	7.67	11		31	7.42	15		16	7.5	21
	15	7.69	10		1	7.45	16		17	7.75	21
	16	7.65	10		2	7.3	15		18	7.89	20
	17	7.5	10		3	7.65	14		19	7.96	20
	18	7.61	9		4	7.46	15		20	7.62	20
	19	7.57	10		5	7.64	16		21	7.78	22
	20	7.46	9		6	7.6	15		22	7.68	21
	21	7.39	10		7	7.57	15	Jun-12	23	7.75	22
	22	7.72	12		8	7.92	15		24	7.77	22
	23	7.65	11		9	7.58	15		25	8.01	22
	24	7.62	12		10	7.44	16		26	8.34	24
	25	7.78	11		11	7.53	14		27	7.88	23
	26	7.53	11		12	7.42	14		28	7.86	24
	27	7.39	12		13	7.59	15		29	7.73	23
	28	7.71	11		14	7.68	16		30	7.69	24
	29	7.78	11		15	7.66	16		31	7.57	23
Mar-12	1	7.44	12		16	7.92	18		1	7.68	23
	2	7.23	12		17	7.57	19		2	7.87	23
	3	7.27	13		18	7.44	17		3	7.63	24
	4	7.47	12		19	7.67	16		4	7.71	22
	5	7.36	12		20	7.69	18		5	7.61	22
	6	7.58	12		21	7.48	19		6	7.73	21
	7	7.51	11		22	7.66	17		7	7.59	23
	8	7.72	12		23	7.7	16		8	7.62	23

# Fairview Beach WWTP Effluent pH and Temperature Data June 2009 - June 2012

Jun-12

Date	pH (S.U.)	Temp (°C)
9	7.74	24
10	8.23	24
11	8.15	25
12	7.76	24
13	7.9	24
14	7.84	23
15	7.56	24
16	7.97	23
17	8.22	24
18	7.73	23
19	7.55	23
20	7.75	24
21	7.62	25
22	7.71	26
23	7.8	25
24	7.68	23
25	7.62	25
26	7.73	23
27	7.79	23
28	7.75	24
29	7.93	25
30	8.27	27

90th percentile pH = 8.1 SU

90th percentile temperature = 26°C

Potomac River pH and Temperature Data Maryland's Ambient Station  
RET2.2 From January 2009 to February 2012

Date	pH (SU)	Temperature°C
1/12/2009	7.6	3.7
2/9/2009	7.6	2.3
3/5/2009	7.7	3.1
3/16/2009	7.6	6.5
4/13/2009	8	11.6
4/27/2009	7.7	16.3
5/11/2009	7.6	18.2
6/15/2009	7.4	25
6/29/2009	7.5	25.6
7/13/2009	7.4	26.2
7/27/2009	7.6	27.5
8/10/2009	7.5	28.2
8/24/2009	7.4	28.4
9/14/2009	7.6	22.8
9/28/2009	7.6	22.5
10/5/2009	7.7	20.3
10/19/2009	7.7	13.4
11/16/2009	7.8	12.1
12/7/2009	7.9	8.8
1/20/2010	7.5	1.6
2/22/2010	7.6	2.3
3/15/2010	8	9.4
4/12/2010	7.6	15.8
5/10/2010	8	19.1
6/22/2010	7.6	27.9
7/12/2010	7.5	28.3
8/23/2010	7.6	28.2
9/21/2010	7.8	23.4
10/18/2010	7.7	18
11/15/2010	7.8	12
12/16/2010	7.8	3.1
1/25/2011	7.7	0.4
2/7/2011	7.7	1.8
3/8/2011	8	7
4/11/2011	7.6	11.7
5/16/2011	7.5	19.8
6/20/2011	7.5	25.5
7/11/2011	7.5	28.4
8/1/2011	7.5	29.6
8/15/2011	7.5	28
9/1/2011	7.8	25.5
9/12/2011	7.8	24.6
10/11/2011	7.6	19.5
11/14/2011	7.9	11.5
12/12/2011	7.9	7.8
1/9/2012	8.1	5
2/6/2012	7.8	5.4

pH 90%percentile = 7.9 SU

Temperature = 28.2°C

Fairview Beach Hardness Results (September 10 -  
August 12)

Month/ Year	Results mg/l	Results mg/l
8/12	57	73
7/12	34	27
6/12	27	32
5/12	39	38
4/12	54	40
3/12	55	52
2/12	58	57
1/12	49	53
12/11	69	66
11/11	62	66
10/11	68	65
9/11	54	102
8/11	70	60
7/11	50	42
6/11	52	55
5/11	68	67
4/11	67	63
3/11	64	84
2/11	79	68
1/11	79	65
12/10	82	78
11/10	68	63
10/10	66	75
9/10	54	58

Average = 60

# VaFWIS - Department of Game and Inland Fisheries

38,20,01.0 -77,14,07.9

is the Search Point

Submit

Cancel

## Search Point

☒ Change to "clicked" map point

☐ Fixed at 38,20,01.0 - 77,14,07.9

 Search Point is not in center at map center

## Show Position Rings

☒ Yes ☐ No

1 mile and 1/4 mile at the Search Point

## Show Search Area

☒ Yes ☐ No

2 Search distance miles radius

Search Point is at map center

## Base Map Choices

Topography

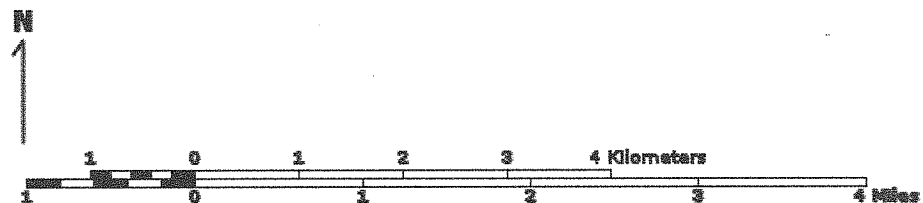
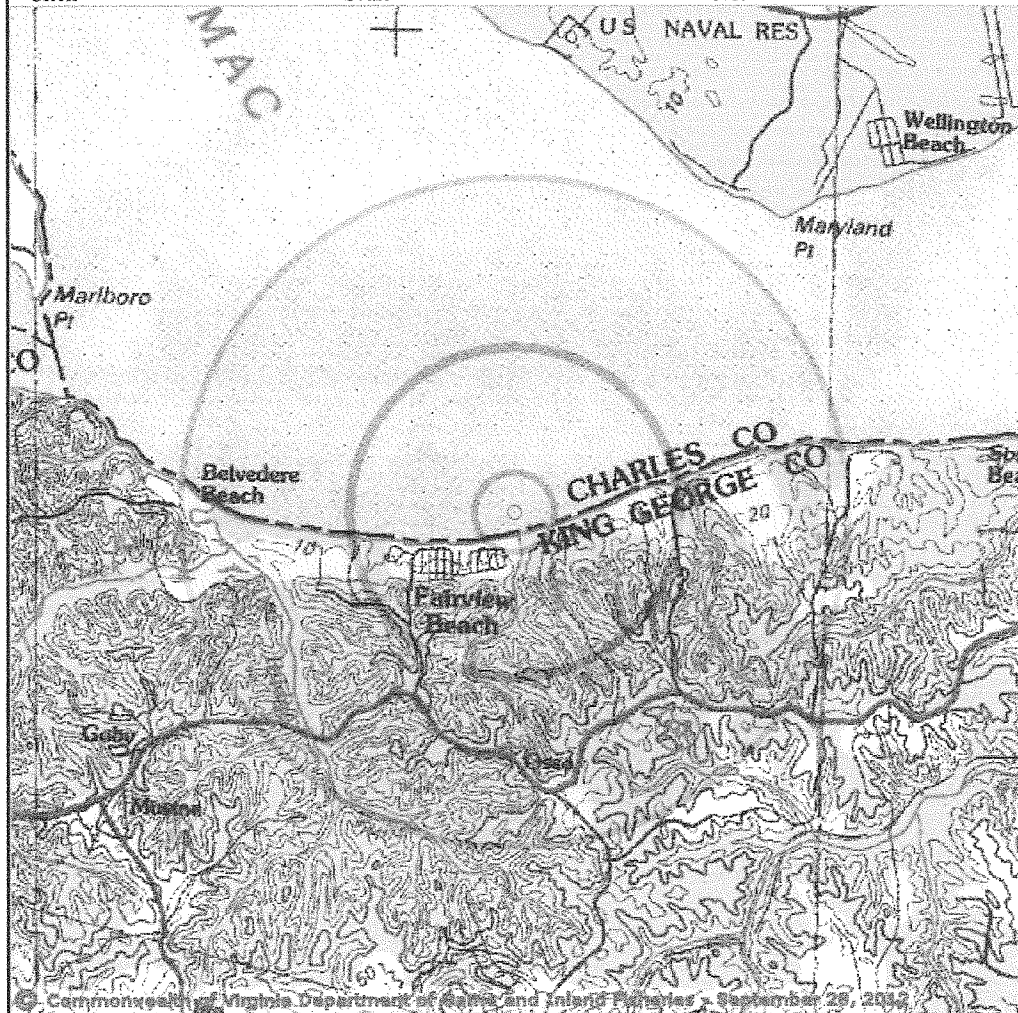
## Map Overlay Choices

Current List: Position, Search

## Map Overlay Legend

☒ Position Rings  
1 mile and 1/4 mile at the Search Point

☒ 2 mile radius Search Area

Map Click     Map Scale  Screen Size    


Point of Search 38,20,01.0 -77,14,07.9

Map Location 38,20,01.0 -77,14,07.9

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserer-usa.com](http://Microsoft.terraserer-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 299808 and top 4249996. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Attachment 7

Topographic maps and Black and white aerial photography for year 1990+ are from the United States Department of the Interior, United States Geological Survey. Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network. Shaded topographic maps are from TOPO! ©2006 National Geographic <http://www.national.geographic.com/topo>. All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2012-09-28 13:19:05 (qa/qc June 12, 2012 14:14 - tn=427460 dist=32181)

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# VaFWIS Initial Project Assessment Report

Compiled on 9/28/2012, 1:21:45 PM

[Help](#)

Known or likely to occur within a **2 mile radius** around point **38,20,01.0 -77,14,07.9**  
in **099 King George County, VA**

[View Map of Site Location](#)

389 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 20) (16 species with Status\* or Tier I\*\* or Tier II\*\*)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
010032	FE	II	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA
040379	ST	I	<u>Sparrow, Henslow's</u>	Ammodramus henslowii		Habitat
040093	FSST	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus	<u>Yes</u>	BOVA,BECAR,Habitat,BAEANests
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA
040110		I	<u>Rail, black</u>	Laterallus jamaicensis		Habitat
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA
040319		I	<u>Warbler, black-throated green</u>	Dendroica virens		BOVA
040038		II	<u>Bittern, American</u>	Botaurus lentiginosus		Habitat
040052		II	<u>Duck, American black</u>	Anas rubripes		BOVA
040105		II	<u>Rail, king</u>	Rallus elegans		BOVA,Habitat
040187		II	<u>Tern, royal</u>	Sterna maxima maximus		BOVA
040320		II	<u>Warbler, cerulean</u>	Dendroica cerulea		BOVA
040266		II	<u>Wren, winter</u>	Troglodytes troglodytes		BOVA
030068		III	<u>Turtle, eastern box</u>	Terrapene carolina carolina		BOVA
040037		III	<u>Bittern, least</u>	Ixobrychus exilis exilis		BOVA

040094		III	<u>Harrier,</u> <u>northern</u>	Circus cyaneus		BOVA
040034		III	<u>Heron,</u> <u>tricolored</u>	Egretta tricolor		BOVA

To view **All 389 species** [View 389](#)

\* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate;  
FS=Federal Species of Concern; CC=Collection Concern

\*\* I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;  
III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Bat Colonies or Hibernacula: **Not Known**

#### Anadromous Fish Use Streams (1 records)

[View Map of All  
Anadromous Fish Use Streams](#)

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
C64	<u>Potomac river</u>	Confirmed	6		IV	<u>Yes</u>

#### Impediments to Fish Passage (1 records)

[View Map of All  
Fish Impediments](#)

ID	Name	River	View Map
1211	MONROE DAM	TR-KEYS RUN	<u>Yes</u>

#### Colonial Water Bird Survey

N/A

#### Threatened and Endangered Waters

N/A

#### Managed Trout Streams

N/A

#### Bald Eagle Concentration Areas and Roosts

are present. [View Map of Bald Eagle Concentration Areas and Roosts](#)

(6 records)

BECAR ID	Observation Year	Authority	Type	Comments	View Map
53	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use High	<u>Yes</u>

54	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Low	<a href="#">Yes</a>
55	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Moderate	<a href="#">Yes</a>
56	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use High	<a href="#">Yes</a>
57	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Low	<a href="#">Yes</a>
58	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Moderate	<a href="#">Yes</a>

**Bald Eagle Nests** ( 14 records )[View Map of All Query Results](#)[Bald Eagle Nests](#)

Nest	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE*	Highest Tier**	
<a href="#">KG0507</a>	14	Apr 24 2011	1		II	<a href="#">Yes</a>
<a href="#">KG0603</a>	11	Apr 24 2011	1		II	<a href="#">Yes</a>
<a href="#">KG0703</a>	10	Apr 24 2011	1		II	<a href="#">Yes</a>
<a href="#">KG1002</a>	4	Apr 24 2011	1		II	<a href="#">Yes</a>
<a href="#">KG9002</a>	30	Apr 24 2011	1		II	<a href="#">Yes</a>
<a href="#">KG9701</a>	22	May 16 2010	1		II	<a href="#">Yes</a>
<a href="#">KG0403</a>	7	Apr 29 2007	1		II	<a href="#">Yes</a>
<a href="#">KG0402</a>	5	Apr 29 2006	1		II	<a href="#">Yes</a>
<a href="#">KG9507</a>	13	Apr 27 2000	1		II	<a href="#">Yes</a>
<a href="#">KG8902</a>	1	Jan 1 1989	1		II	<a href="#">Yes</a>
<a href="#">KG8701</a>	2	Jan 1 1988	1		II	<a href="#">Yes</a>
<a href="#">KG8401</a>	1	Jan 1 1984	1		II	<a href="#">Yes</a>
<a href="#">KG7901</a>	2	Jan 1 1983	1		II	<a href="#">Yes</a>
<a href="#">KG7501</a>	2	May 24 1978	1		II	<a href="#">Yes</a>

Displayed 14 Bald Eagle Nests

**Habitat Predicted for Aquatic WAP Tier I & II Species**

N/A

**Habitat Predicted for Terrestrial WAP Tier I & II Species** ( 5 Species )[View Map of Combined Terrestrial Habitat Predicted for 5 WAP Tier I & II Species Listed Below](#)

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	<a href="#">Ammodramus henslowii</a>	<a href="#">Yes</a>
040093	FSST	II	<a href="#">Eagle, bald</a>	<a href="#">Haliaeetus leucocephalus</a>	<a href="#">Yes</a>

040110		I	<u>Rail, black</u>	<i>Laterallus jamaicensis</i>	<u>Yes</u>
040038		II	<u>Bittern, American</u>	<i>Botaurus lentiginosus</i>	<u>Yes</u>
040105		II	<u>Rail, king</u>	<i>Rallus elegans</i>	<u>Yes</u>

**Public Holdings:**

N/A

Compiled on 9/28/2012, 1:21:45 PM I427460.0 report=IPA searchType= R dist= 3218 poi= 38,20,01.0 -77,14,07.9

PixelSize=64; Anadromous=0.045148; BECAR=0.116014; Bats=0.032613; Buffer=0.176159; County=0.141903; Impediments=0.034192; Init=0.212306; PublicLands=0.052345; SppObs=1.497617; TEWaters=0.040698; TierReaches=0.039308; TierTerrestrial=0.141248; Total=2.393763; Trout=0.038681

Potomac River Salinity Data Maryland's Ambient Station RET2.2

From January 2009 to February 2012

Date	Salinity (ppt)
1/12/2009	4.46
2/9/2009	5.21
3/5/2009	4.76
3/16/2009	6.37
4/13/2009	5.45
4/27/2009	1.37
5/11/2009	0
6/15/2009	1.42
6/29/2009	2.58
7/13/2009	4.95
7/27/2009	4.12
8/10/2009	5.45
8/24/2009	6.06
9/14/2009	4.43
9/28/2009	4.48
10/5/2009	5.3
10/19/2009	5.32
11/16/2009	2.83
12/7/2009	3.59
1/20/2010	4.61
2/22/2010	2.47
3/15/2010	0
4/12/2010	0.76
5/10/2010	1.26
6/22/2010	2.61
7/12/2010	6.37
8/23/2010	6.06
9/21/2010	7.62
10/18/2010	6.56
11/15/2010	11.45
12/16/2010	5.82
1/25/2011	7.93
2/7/2011	5.51
3/8/2011	0.11
4/11/2011	0
5/16/2011	0.25
6/20/2011	1.16
7/11/2011	1.61
8/1/2011	5.15
8/15/2011	5.15
9/1/2011	4.65
9/12/2011	0.03
10/11/2011	0.79
11/14/2011	0.46
12/12/2011	0
1/9/2012	0.07
2/6/2012	0

Average = 3.5

10/4/2012 10:31:12 AM

Facility = Fairview Beach WWTP Tidal

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 17.2

WLAc = 57.8

Q.L. = .2

# samples/mo. = 12

# samples/wk. = 3

#### Summary of Statistics:

# observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 17.2

Average Weekly limit = 12.5808316386527

Average Monthly Limit = 9.37107519789147

The data are:

10/4/2012 10:29:39 AM

Facility = Fairview Beach WWTP Transition Zone Salinity 3.5

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 6.36

WLAc = 27

Q.L. = .2

# samples/mo. = 12

# samples/wk. = 3

#### Summary of Statistics:

# observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 6.36

Average Weekly limit = 4.65198193150181

Average Monthly Limit = 3.46511850340638

The data are:

Public Notice – Environmental Permit

**PURPOSE OF NOTICE:** To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in King George County, Virginia.

**PUBLIC COMMENT PERIOD:** XXX, 2012 to 5:00 p.m. on XXX, 2012

**PERMIT NAME:** Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

**APPLICANT NAME, ADDRESS AND PERMIT NUMBER:** King George County Service Authority, 9207 Kings Highway, King George, VA 22485, VA0092134

**NAME AND ADDRESS OF FACILITY:** Fairview Beach Wastewater Treatment Plant, 7152 Potomac Landing Drive, King George, VA 22485

**PROJECT DESCRIPTION:** King George County Service Authority has applied for a reissuance of a permit for the public Fairview Beach Wastewater Treatment Plant. The applicant proposes to treated sewage wastewaters from residential areas at a rate of 0.2 million gallons per day into a water body. The sludge will be disposed by taking it to the King George County's Dahlgren Wastewater Treatment Plant (VA0026514) for further digestion and dewatering prior to disposal at the King George Landfill. The facility proposes to release the treated sewage wastewater in the Potomac River in King George County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD<sub>5</sub>, TSS, Dissolved Oxygen, Ammonia as N, Enterococci, Fecal Coliform, Total Nitrogen (annual concentration) and Total Phosphorus (annual concentration).

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

**HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:** DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

**CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:** The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821



**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Fairview Beach Wastewater Treatment Plant
NPDES Permit Number:	VA0092134
Permit Writer Name:	Joan C. Crowther
Date:	October 23, 2012

Major [ ]

Minor [x]

Industrial [ ]

Municipal [x]

**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	x		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	x		
3. Copy of Public Notice?	x		
4. Complete Fact Sheet?	x		
5. A Priority Pollutant Screening to determine parameters of concern?	x		
6. A Reasonable Potential analysis showing calculated WQBELs?	x		
7. Dissolved Oxygen calculations?			x
8. Whole Effluent Toxicity Test summary and analysis?		x	
9. Permit Rating Sheet for new or modified industrial facilities?		x	

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		x	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	x		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	x		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		x	
5. Has there been any change in streamflow characteristics since the last permit was developed?		x	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		x	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	x		
8. Does the facility discharge to a 303(d) listed water?	x		
a. Has a TMDL been developed and approved by EPA for the impaired water?	x		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?		x	
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	x		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		x	
10. Does the permit authorize discharges of storm water?		x	

<b>I.B. Permit/Facility Characteristics – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		x	
12. Are there any production-based, technology-based effluent limits in the permit?		x	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		x	
14. Are any WQBELs based on an interpretation of narrative criteria?		x	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		x	
16. Does the permit contain a compliance schedule for any limit or condition?	x		
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		x	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	x		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		x	
20. Have previous permit, application, and fact sheet been examined?	x		

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

#### II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	x		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	x		

#### II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	x		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	x		

#### II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	x		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	x		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			x
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	x		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	x		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		x	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			x

#### II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	x		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	x		
3. Does the fact sheet provide effluent characteristics for each outfall?	x		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	x		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	x		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	x		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	x		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		x	
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	x		

<b>II.D. Water Quality-Based Effluent Limits – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	x		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	x		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	x		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	x		

<b>II.E. Monitoring and Reporting Requirements</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	x		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			x
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	x		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?	x		
4. Does the permit require testing for Whole Effluent Toxicity?		x	

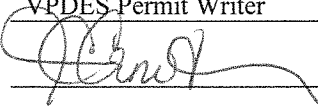
<b>II.F. Special Conditions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit include appropriate biosolids use/disposal requirements?	x		
2. Does the permit include appropriate storm water program requirements?		x	

<b>II.F. Special Conditions – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?	x		
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			x
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		x	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		x	
a. Does the permit require implementation of the “Nine Minimum Controls”?			x
b. Does the permit require development and implementation of a “Long Term Control Plan”?			x
c. Does the permit require monitoring and reporting for CSO events?			x
7. Does the permit include appropriate Pretreatment Program requirements?		x	

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		x		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		x		

### Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Joan C. Crowther</u>
Title	<u>VPDES Permit Writer</u>
Signature	<u></u>
Date	<u>October 23, 2012</u>